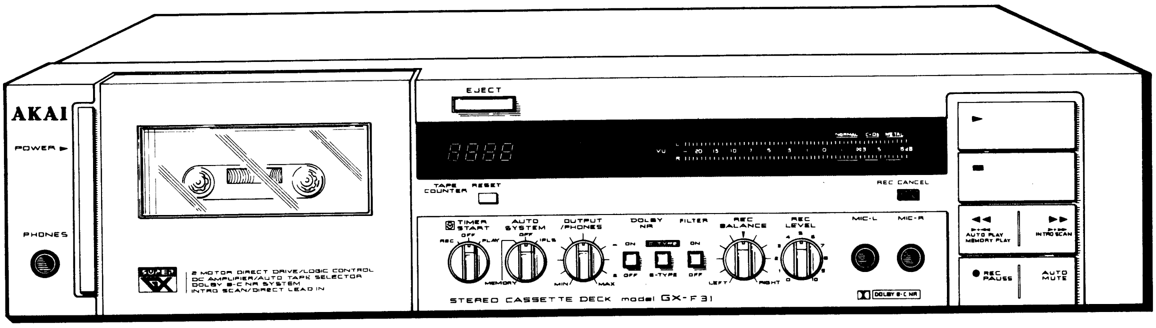
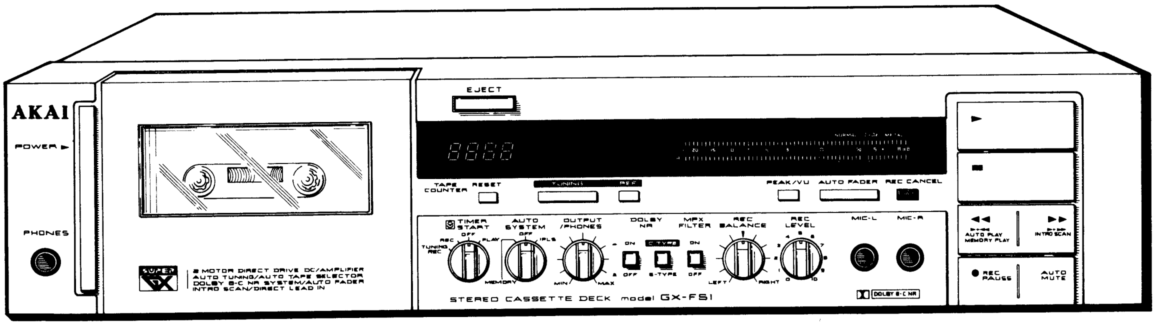
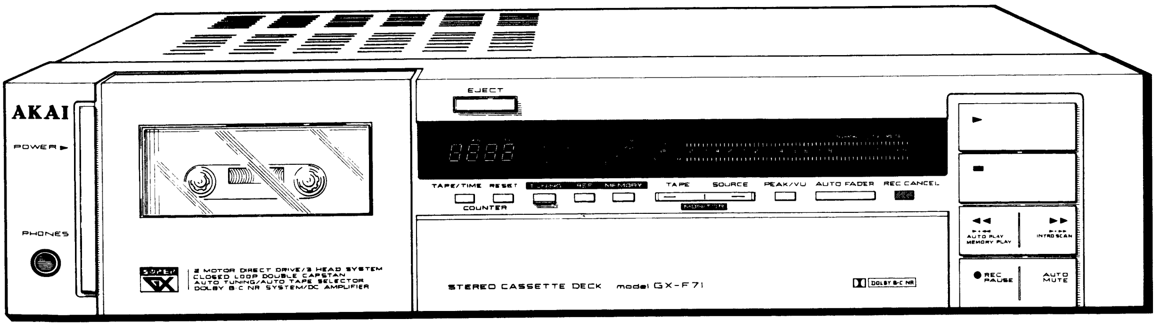
AKAI SERVICE MANUAL


AKAI
POWER
PHONES
EJECT
TAPE COUNTER
RESET
REC CANCEL
TIMER START
AUTO SYSTEM
OUTPUT /PHONES
DOLBY NR
FILTER
REC BALANCE
REC LEVEL
MIC-L
MIC-R
AUTO PLAY MEMORY PLAY
INTRO SCAN
REC PAUSE
AUTO MUTE
2 MOTOR DIRECT DRIVE/LOGIC CONTROL
DC AMPLIFIER/AUTO TAPE SELECTOR
DOLBY B-C NR SYSTEM
INTRO SCAN/DIRECT LEAD IN
STEREO CASSETTE DECK model GX-F31
DOLBY B-C NR


AKAI
POWER
PHONES
EJECT
TAPE COUNTER
RESET
PEAK/VU
AUTO FADER
REC CANCEL
TIMER START
AUTO SYSTEM
OUTPUT /PHONES
DOLBY NR
MPX FILTER
REC BALANCE
REC LEVEL
MIC-L
MIC-R
AUTO PLAY MEMORY PLAY
INTRO SCAN
REC PAUSE
AUTO MUTE
2 MOTOR DIRECT DRIVE DC/AMPLIFIER
AUTO TUNING/AUTO TAPE SELECTOR
DOLBY B-C NR SYSTEM/AUTO FADER
INTRO SCAN/DIRECT LEAD IN
STEREO CASSETTE DECK model GX-F51
DOLBY B-C NR


AKAI
POWER
PHONES
EJECT
TAPE/TIME
RESET
COUNTER
TAPE
SOURCE
PEAK/VU
AUTO FADER
REC CANCEL
AUTO PLAY MEMORY PLAY
INTRO SCAN
REC PAUSE
AUTO MUTE
2 MOTOR DIRECT DRIVE/3 HEAD SYSTEM
CLOSED LOOP DOUBLE CAPSTAN
AUTO TUNING/AUTO TAPE SELECTOR
DOLBY B-C NR SYSTEM/DC AMPLIFIER
STEREO CASSETTE DECK model GX-F71
DOLBY B-C NR

STEREO CASSETTE DECK

MODEL GX-F31

MODEL GX-F51

MODEL GX-F71

GX-F31

GX-F51

GX-F71

STEREO CASSETTE DECK

GX-F31
GX-F51
MODEL GX-F71

THIS MANUAL IS APPLICABLE TO BOTH SILVER
AND PEARL SHADOW PANEL MODELS

SECTION 1 CIRCUIT OPERATION DESCRIPTION
SECTION 2 MODEL GX-F31 SERVICE MANUAL
SECTION 3 MODEL GX-F51 SERVICE MANUAL
SECTION 4 MODEL GX-F71 SERVICE MANUAL
SECTION 5 PARTS LIST
SECTION 6 SCHEMATIC DIAGRAM

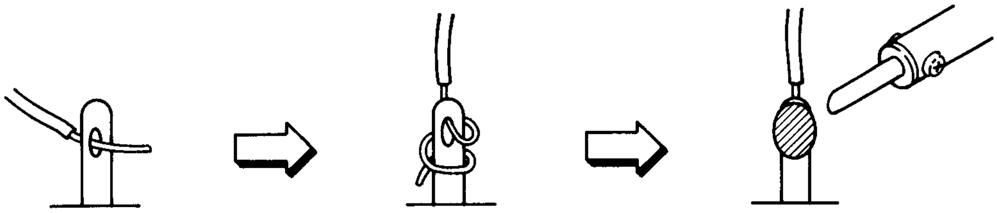
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SECTION 1

CIRCUIT OPERATION DESCRIPTION

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  3. INPUT OUTPUT MODES OF EACH TERMINAL OF AUTO TUNING CPU (M58841-600P) 1- 4
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VI. **REEL MOTOR DRIVE CIRCUIT 1-14**

I. DESCRIPTION OF GX-F71 AUTO TUNING FUNCTION

1. GX-F71 AUTO TUNING BLOCK DIAGRAM

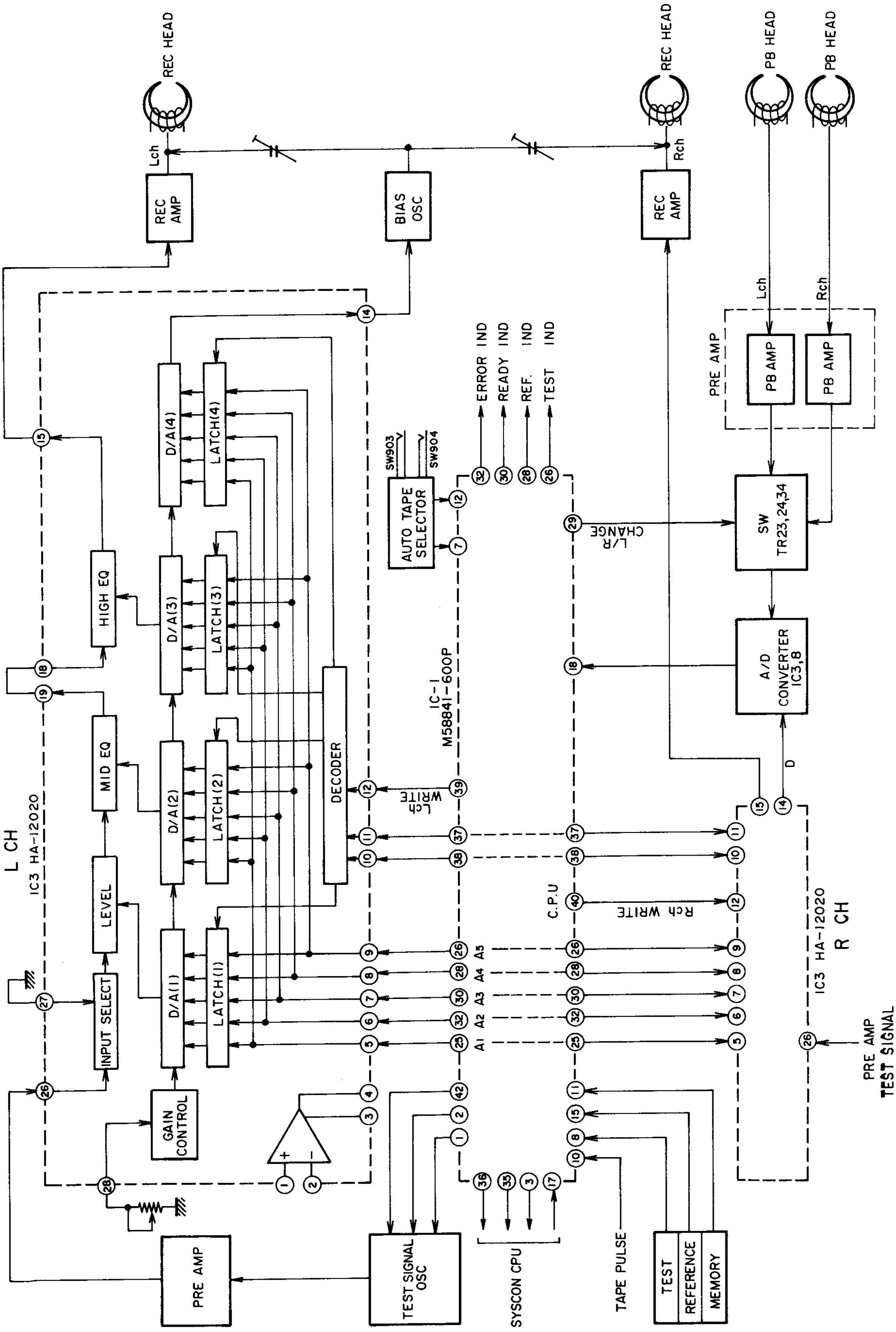

REC HEAD
Lch
REC AMP
BIAS OSC
REC HEAD
Rch
REC AMP
PB HEAD
PB HEAD
Lch
Rch
PRE AMP
PB AMP
PB AMP
ERROR IND
READY IND
REF. IND
TEST IND
SW903
SW904
AUTO TAPE SELECTOR
L/R CHANGE
SW TR23,24,34
A/D CONVERTER IC3,8
D
D/A(4)
LATCH(4)
D/A(3)
LATCH(3)
HIGH EQ
D/A(2)
LATCH(2)
MID EQ
DECODER
D/A(1)
LATCH(1)
LEVEL
INPUT SELECT
GAIN CONTROL
L CH
IC3 HA-12020
IC-1 M58841-600P
Lch WRITE
C.P.U
Rch WRITE
A5
A4
A3
A2
A1
IC3 HA-12020
R CH
PRE AMP TEST SIGNAL
PRE AMP
TEST SIGNAL OSC
SYSCON CPU
TAPE PULSE
TEST
REFERENCE
MEMORY

Fig. 1 Auto Tuning Block Diagram

2. DESCRIPTION OF GX-F71 AUTO TUNING FUNCTION

1) When, after the power is "on", the cassette-pack is set and the test key is set to "on" position, terminals, ③, ㉟ and ㊱, of tuning CPU (IC1) becomes "L", "L" and "H", respectively, system control (IC8) is set to FF mode and the counter quickly winds 64 counts. Then, ③, ㉟ and ㊱ becomes "H", "L" and "L", respectively, the syscon CPU is set to Rec/Play mode and the bias circuit oscillates.

2 Coarse adjustment of level

Terminals ①, ② and ㊷ of tuning CPU (IC1) becomes "L", "L", and "L" respectively when CPU is set to Rec/Play mode and the test signal OSC oscillates 1 kHz. This output passes through the PRE-Amp circuit, enters terminal ㉖ of IC3 as the test signal and is output from ⑮. Then, the signal passes through Rec Amp, mixed with the bias and is applied to the REC head.

The 1 kHz signal recorded on the tape passes through the PB Head and PB Amp, Lch and Rch signals are selected by the switch circuit of TR23, 24 and 34 (Tuning P.C Board), A/D converted at IC8 and IC3 (Part) and, then, input into IC1 ⑱ as a PB signal level detection signal.

Under this condition, the signal level of 1 kHz is positively half-wave rectified by IC8 and charged to C35 (10μ/16V) and applied to IC3 ②, but 5 bits (32 steps) of stair step waveform signal is applied to the terminal, IC3 ①, and when the level of IC3 ① becomes equal to that of terminal ②, the output is changed from "L" to "H" while the collector of TR49 is trailed from "H" to "L". PB signal level is detected by this trailing. At this time, the data outputs at terminals ㉕, ㉖, ㊳, ㉚ and ㉜ of IC1 are written as level data in latch (1) of IC3. This operation is performed once for Lch and Rch, respectively.

3) Bias adjustment

When the coarse level adjustment is completed, a step form wave (up direction) is output from IC3 (Lch) ⑭ terminal and controls IC7 ⑥ → IC7 ④ → TR19, thus changing the amount of bias.

As the bias is changed, the signal of 1 kHz from the test signal circuit is recorded on the tape as a signal of changed level and accordingly the PB level is changed. Since these changes are in proportion to the bias change, the PB level is detected.

The bias is adjusted twice; in up direction and down direction, therefore, the mean value added +4 step is written as bias data into the latch of IC3 (Lch) as the most suitable bias amount. Only Rch is subjected to bias adjustment.

4) 1 kHz level adjustment

When the bias adjustment is completed, the 1 kHz level adjustment is made in the same manner as the coarse level adjustment.

5) 7 kHz EQ adjustment

When the 1 kHz level adjustment is completed, terminals ①, ② and ㊷ of IC1 become "L", "H" and "L", respectively and the test signal OSC circuit oscillates 7 kHz. The inner D/A (2) and latch (2) of IC3 are controlled by the 5 bit signal from CPU (IC1) so that the 7 kHz PB level is adjusted to the same level as the 1 kHz reference. When the 7 kHz level is adjusted to the same level of 1 kHz reference, the data are written into latch (2).

The 7 kHz EQ adjustment is made once in Lch and Rch, respectively.

6) 13 kHz EQ adjustment

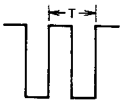
After 7 kHz EQ is adjusted, terminals ①, ② and ㊷ of IC1 become "H", "H" and "L", respectively and the test signal OSC circuit oscillates 13 kHz and when the PB signal level of 13 kHz is adjusted to the same level as the 1 kHz reference level, the data of 13 kHz EQ are written into latch (3) of IC3.

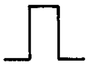
The adjustments from 4) to 6) are repeated three times.

7) When the above tuning is completed, terminals ③, ㉟ and ㊱ of IC1 become "L", "H" and "H", respectively and the syscon CPU is set to RWD mode.

In case of TUNING REC, the tape counter is rewound to "0" and in case where Rec/Play and Timer Start SW are off, REW is changed to REC/PAUSE at "23" on the counter.

3. INPUT OUTPUT MODES OF EACH TERMINAL OF AUTO TUNING CPU (M58841-600P)

<table>
<tr><th>PIN NO.</th><th>NAME</th><th>FUNCTION</th></tr>
<tr><td>1
2</td><td>FRQ I
FRQ II</td><td>TEST SIGNAL OSC FREQUENCY CONTROL
<table>
<tr><td>①</td><td>L</td><td>L</td><td>H</td></tr>
<tr><td>②</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>OSC</td><td>1 kHz</td><td>7 kHz</td><td>13 kHz</td></tr>
</table></td></tr>
<tr><td>42</td><td>OSC START</td><td>L: OSC ON H: OSC OFF</td></tr>
<tr><td>35
36
3</td><td>MECHACON I
MECHACON II
MECHACON III</td><td>
<table>
<tr><td>㉟</td><td>L</td><td>H</td><td>L</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>㊱</td><td>L</td><td>L</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>③</td><td>L</td><td>L</td><td>L</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td></td><td>NON OPERATION</td><td>STOP</td><td>FF</td><td>REW</td><td>REC/PLAY</td><td>REC/PAUSE</td></tr>
</table></td></tr>
<tr><td>12
7</td><td>TAPE POSITION I
TAPE POSITION II</td><td>
<table>
<tr><td>⑫</td><td>H</td><td>H</td><td>L</td></tr>
<tr><td>⑦</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td>POSITION</td><td>NORMAL</td><td>CrO_2</td><td>METAL</td></tr>
</table></td></tr>
<tr><td>8</td><td>TEST START KEY</td><td>Started by “L” input</td></tr>
<tr><td>11</td><td>MEMORY KEY</td><td>Memory output by “L” input</td></tr>
<tr><td>15</td><td>REFERENCE KEY</td><td>Reference output by “L” input</td></tr>
<tr><td>10</td><td>COUNTER PULSE</td><td>

“T” means one full counts</td></tr>
<tr><td>16</td><td>TIMER</td><td>With “L” input, Tuning REC is feasible but with “H”, it is not feasible.</td></tr>
<tr><td>17</td><td>TUNING SAFE</td><td>With “H” input, tuning is feasible, but with “L” input, tuning is not feasible.
If the “H” input enters during tuning, the tuning stops.</td></tr>
<tr><td>18</td><td>PB DETECT</td><td>Judged by the trailing edge</td></tr>
<tr><td>25
32
30
28
26</td><td>DATA I (A_1)
DATA II (A_2)
DATA III (A_3)
DATA IV (A_4)
DATA V (A_5)</td><td>“H” output is used as data output</td></tr>
<tr><td>27</td><td>IND OUT</td><td>The “H” synchronized with one of Data II – V is output to light the tuning indicator.</td></tr>
<tr><td>29</td><td>Lch/Rch CHANGE</td><td>“H” output → Lch. “L” output → Rch.</td></tr>
<tr><td>41</td><td>TUNING TEST</td><td>While testing → “H” output. While test is off → “L”.</td></tr>
<tr><td>37
38</td><td>LATCH SELECT I
LATCH SELECT II</td><td>Latch of HA12020 is selected
<table>
<tr><td>㊲</td><td>L</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>㊳</td><td>L</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>DATA</td><td>1 kHz Data</td><td>7 kHz Data</td><td>13 kHz Data</td><td>Bias, A/D Data</td></tr>
</table></td></tr>
<tr><td>39
40</td><td>Lch WRITE
Rch WRITE</td><td>
Output pulse. Latch data at the edge of rise.</td></tr>
<tr><td>31</td><td>HOLD RESET</td><td>When “H” output is being made, reset is OK. It is “H” while test is off.</td></tr>
</table>

II. GX-F71 SYSCON CIRCUIT FUNCTIONS

1. GX-F71 SYSCON BLOCK DIAGRAM

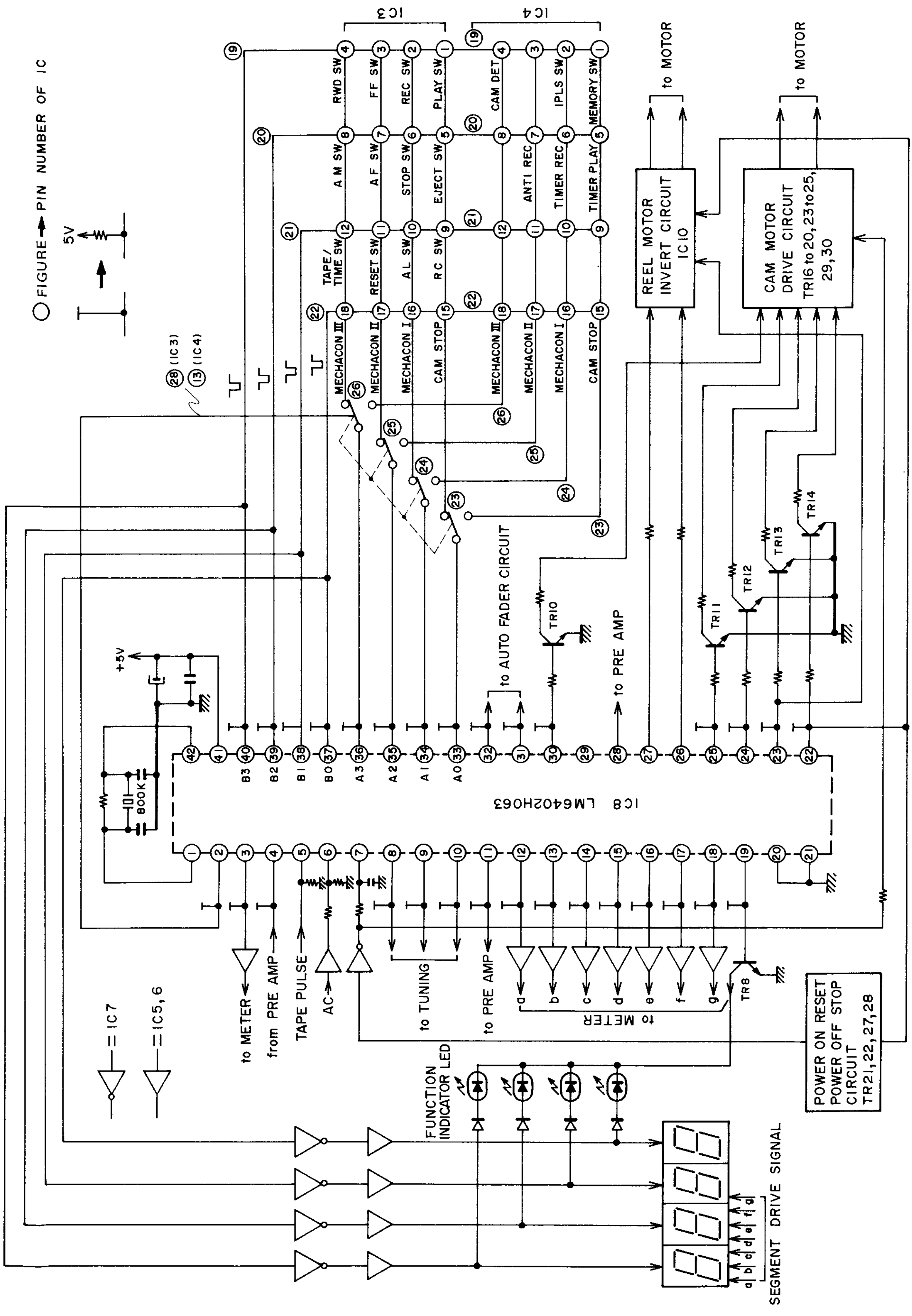
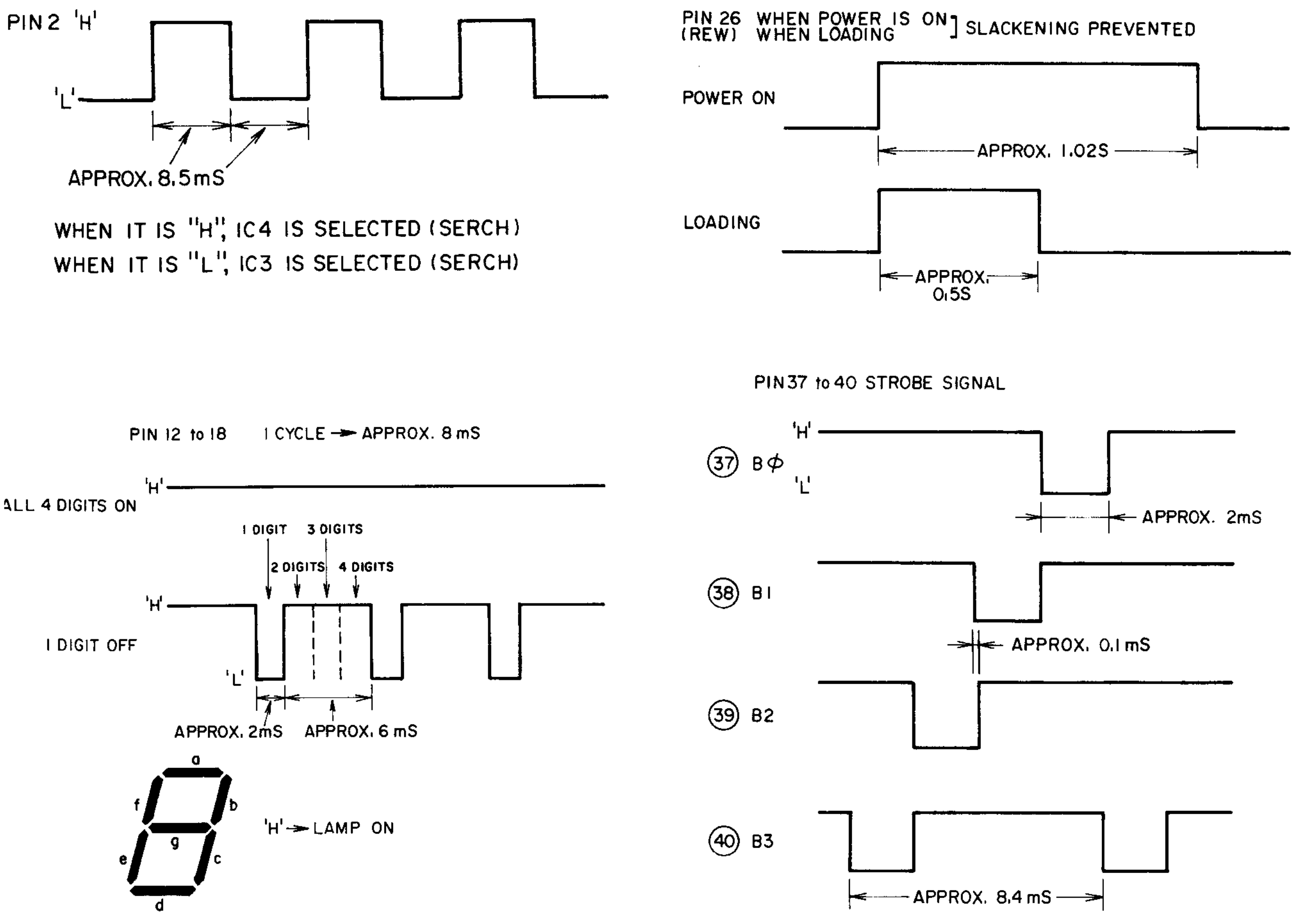

○ FIGURE → PIN NUMBER OF IC
5V
IC3
IC4
RWD SW
FF SW
REC SW
PLAY SW
CAM DET
IPLS SW
MEMORY SW
A M SW
A F SW
STOP SW
EJECT SW
ANTI REC
TIMER REC
TIMER PLAY
TAPE/TIME SW
RESET SW
AL SW
RC SW
MECHACON Ⅲ
MECHACON Ⅱ
MECHACON Ⅰ
CAM STOP
㉘ (IC3)
⑬ (IC4)
to MOTOR
to MOTOR
REEL MOTOR INVERT CIRCUIT IC10
CAM MOTOR DRIVE CIRCUIT TR16 to 20, 23 to 25, 29, 30
TR10
TR11
TR12
TR13
TR14
to AUTO FADER CIRCUIT
to PRE AMP
+5V
800K
IC8 LM6402H063
B3
B2
B1
B0
A3
A2
A1
A0
to METER
from PRE AMP
TAPE PULSE
AC
to TUNING
to PRE AMP
a
b
c
d
e
f
g
to METER
TR8
POWER ON RESET POWER OFF STOP CIRCUIT TR21, 22, 27, 28
FUNCTION INDICATOR LED
SEGMENT DRIVE SIGNAL
= IC7
= IC5, 6

Fig. 2 Syscon Block Diagram

2. MEANING EACH TERMINAL OF CPU (LM6402 H063)

PIN NO.	SYMBOL	MEANING	
1	XTAL	Input of crystal oscillator	
2*	C0	Input port selection storobe	
3	C1	Colon, MIN/SEC is lit, turned on when level is "H".	
4	C2	Between musics signal input. "H" while between musics.	
5	C3	Tape pulse input	
6	$\overline{INT}$	Terminal for interruption. Power supply frequency input.	
7	$\overline{RES}$	Reset terminal. When power is on, reset when it is "L".	
8	D0	Mecha stop terminal. Stops when it is "L".	
9	D1	BIAS OSC control terminal. Stop when it is "H".	
10	D2	REC MUTE terminal. MUTE when it is "H".	
11	D3	PB MUTE terminal. MUTE when it is "H".	
12*	E0	Segment LED Drive a	Those synchronized with B0 ~ B3 are turned on lamp.
13*	E1	Segment LED Drive b	
14*	E2	Segment LED Drive c	
15*	E3	Segment LED Drive d	
16*	F0	Segment LED Drive e	
17*	F1	Segment LED Drive f	
18*	F2	Segment LED Drive g	
19	F3	Strobe signal for driving function indication LED. Synchronized LED is lit. Refer to B0 ~ B3.	
20	GND	Connect to ground	
21	GND	Connect to ground	
22	G0	Cam motor drive terminal. When played → "H"	
23	G1	Cam motor drive terminal. When stopped → "H"	
24	G2	Cam motor drive terminal. When searching → "H" (when CUE)	
25	G3	Cam motor drive terminal. When FAST → "H" (when FF, REW)	
26*	H0	REEL M. reverse turn terminal. When REW → "H" . Prevents tape slackening.	
27	H1	REEL M. normal turn terminal. When FF, PLAY → "H" .	
28	H2	When PLAY → "H". When REC → "L" .	
29	H3	No connection	
30	I0	Cam motor drive terminal. When EJECT → "H" .	
31	I1	AUTO FADE IN. → "L" active	
32	I2	AUTO FADE OUT. → "L" active	
33*	A0	Data input	
34*	A1		
35*	A2		
36*	A3		
37*	B0	Data selection strobe signal output. 4 digits drive	REC LED Drive
38*	B1		PLAY LED Drive
39*	B2		REW LED Drive
40*	B3		FF LED Drive
41	Vcc	+5V	
42	EXTAL	Input of crystal oscillator	

* Please refer to Fig. of this terminals.


PIN 2 'H'
'L'
APPROX. 8.5mS
WHEN IT IS "H", IC4 IS SELECTED (SERCH)
WHEN IT IS "L", IC3 IS SELECTED (SERCH)
PIN 26 (REW) WHEN POWER IS ON WHEN LOADING] SLACKENING PREVENTED
POWER ON
APPROX. 1.02S
LOADING
APPROX. 0.5S
PIN 12 to 18 1 CYCLE → APPROX. 8 mS
'H'
ALL 4 DIGITS ON
1 DIGIT 3 DIGITS
2 DIGITS 4 DIGITS
'H'
1 DIGIT OFF
'L'
APPROX. 2mS APPROX. 6 mS
a
f
b
g
e
c
d
'H' → LAMP ON
PIN37 to 40 STROBE SIGNAL
'H'
㊲ BΦ
'L'
APPROX. 2mS
㊳ B1
APPROX. 0.1 mS
㊴ B2
㊵ B3
APPROX. 8.4 mS

Syscon IC8 Pin ㉝ ~ ㊱ data input waveform

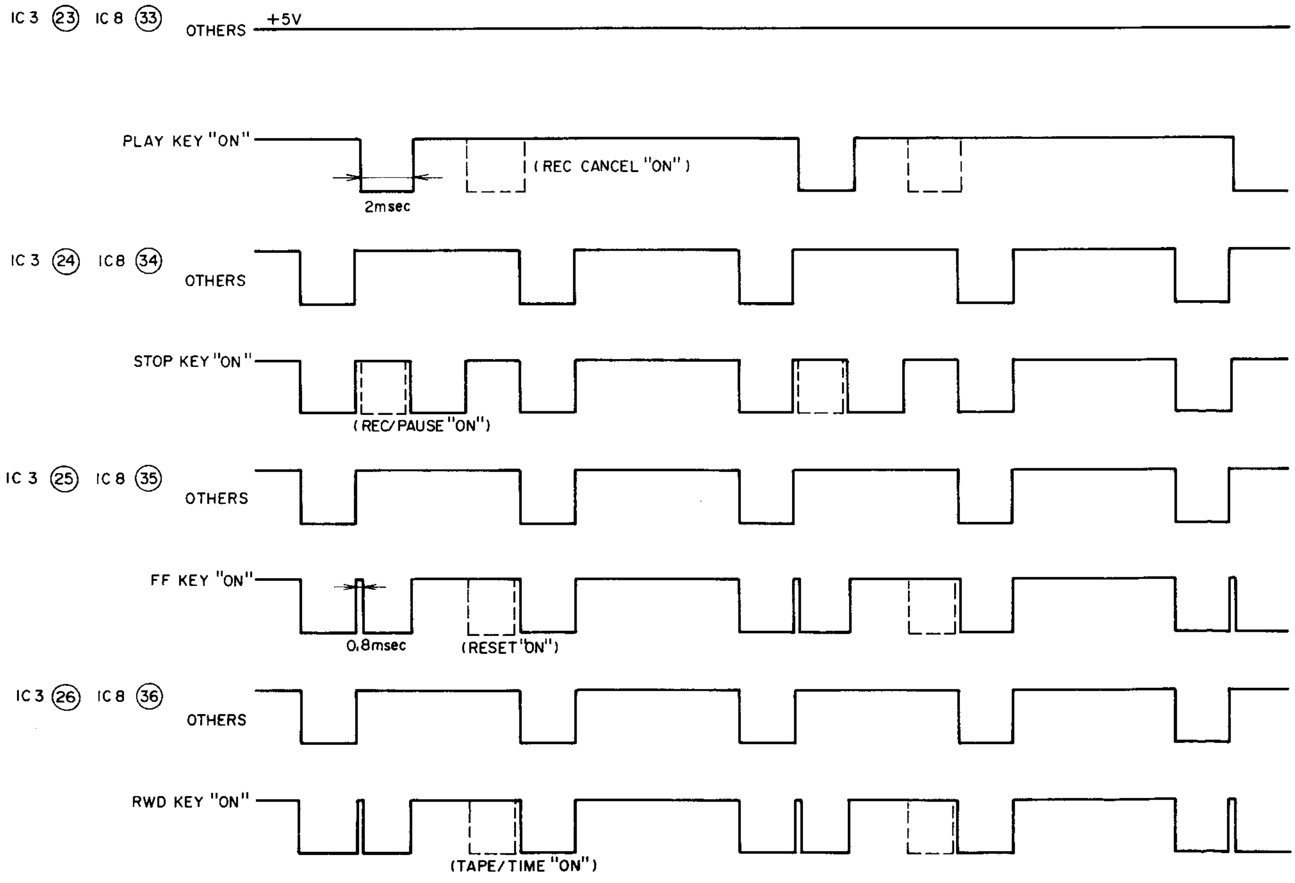

IC 3 ㉓ IC 8 ㉝ OTHERS +5V
PLAY KEY "ON"
(REC CANCEL "ON")
2msec
IC 3 ㉔ IC 8 ㉞ OTHERS
STOP KEY "ON"
(REC/PAUSE "ON")
IC 3 ㉕ IC 8 ㉟ OTHERS
FF KEY "ON"
0.8msec
(RESET "ON")
IC 3 ㉖ IC 8 ㊱ OTHERS
RWD KEY "ON"
(TAPE/TIME "ON")

Fig. 3

3. CONNECTION OF EACH TERMINAL OF IC (LC 7800) FOR EXPANDING GX-F71 INPUT PORT

PIN	Items connected to IC3	Items connected to IC4
1	PLAY SW	MEMORY SW
2	REC SW	IPLS SW
3	FF SW	OPEN ("H") (No connection)
4	REW SW	R104 of cam motor drive circuit
5	EJECT SW	TIMER PLAY SW
6	STOP SW	TIMER REC SW
7	AUTO FADER SW	ANTIREC SW
8	AUTO MUTE SW	+5 V (No connection)
9	REC CANCEL SW	+5 V (No connection)
10	AUTO LOADING SW	+5 V (No connection)
11	RESET SW	+5 V (No connection)
12	TAPE/TIME SW	+5 V (No connection)
13	GND	MICON PIN2
14	GND	GND
15	C-stop signal of cam motor drive circuit	
16	TUNING MICON PIN 35	(For Mechacontrol Signal When TUNING)
17	TUNING MICON PIN 36	
18	TUNING MICON PIN 3	

Mechacontrol signal from TUNING MICON

TUNING MICON PIN	SYSCON MICON PIN	NON OPER-ATION	STOP	FF	REW	REC/ PLAY	REC/ PAUSE	TEST OFF
35 (O_0) MECHACON I	34 (A1)	L	H	L	H	L	H	L
36 (O_1) MECHACON II	35 (A2)	L	L	H	H	L	L	L
3 (O_2) MECHACON III	36 (A3)	L	L	L	L	H	H	L

19	SYSCON MICON PIN 40 (B3)	
20	SYSCON MICON PIN 39 (B2)	
21	SYSCON MICON PIN 38 (B1)	
22	SYSCON MICON PIN 37 (B0)	
23	SYSCON MICON PIN 33 (A0)	
24	SYSCON MICON PIN 34 (A1)	
25	SYSCON MICON PIN 35 (A2)	
26	SYSCON MICON PIN 36 (A3)	
27	+5V	+5V
28	MICON PIN 2	+5V

III. DESCRIPTION OF GX-F51 CIRCUIT

1. OUTLINE OF GX-F51 AUTO TUNING SYSTEM

When the test switch is set to STOP position, the microprocessor sets the mode to FF for 64 counts, the leader tape is avoided and REC mode is set.

While changing the bias by variation of 3 bits 8 steps, the standard input of 1 kHz/10 kHz is recorded in one step. When 8 steps are completed, the tape is rewound and the point where the level of 1 kHz is equal to that of 10 kHz is picked up as a bias setting point. If there is no equal point, the same process is repeated and a point with minimum difference between 1 kHz and 10 kHz is picked up as the setting point. The variable range is ±20%.

Next 1 kHz signal is record at 8 different levels (8 steps). Then the tape is played back and the recording sensitivity level is set at the level equal to the reference input level (−20VU). If there is no level equal to the reference input level, recording & playback will be carried out again and the recording sensitivity level will be set at the level closest to the reference input level. The variable range is −3 dB to +4 dB. By changing the bias, frequency characteristics 1 kH/10 kHz can be adjusted and by setting REC/PB levels, the fluctuation of frequency characteristics can be absorbed when, for instance, using Dolby-C type, etc. The contents of tuning is not changed unless REF is depressed or the tuning is repeated again.

GX-F51 should set nearest to REF without indication of errors.

2. GX-F51 AUTO TUNING BLOCK DIAGRAM

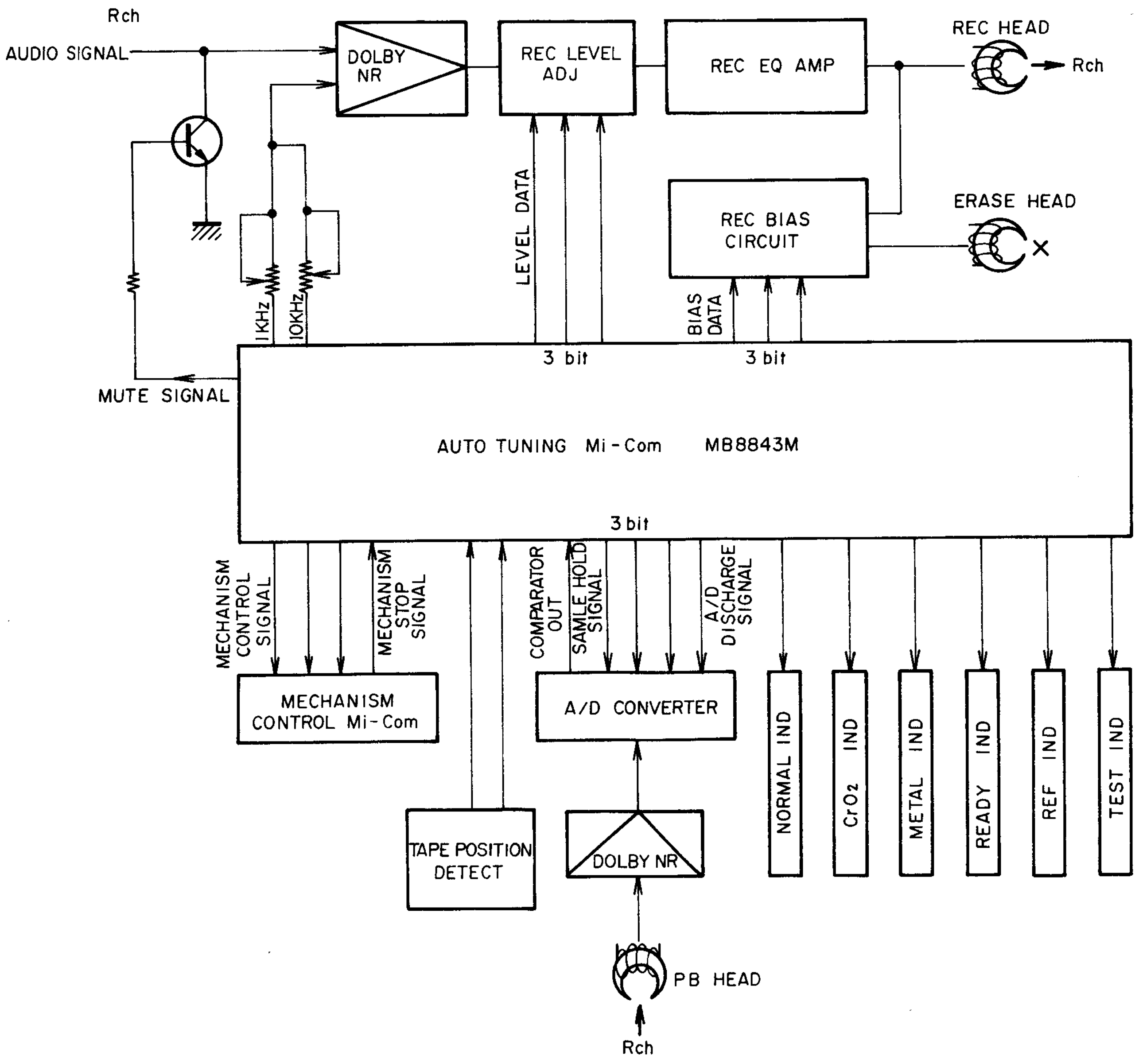

Rch
AUDIO SIGNAL
DOLBY NR
REC LEVEL ADJ
REC EQ AMP
REC HEAD
Rch
LEVEL DATA
REC BIAS CIRCUIT
ERASE HEAD
1KHz
10KHz
BIAS DATA
3 bit
3 bit
MUTE SIGNAL
AUTO TUNING Mi-Com MB8843M
3 bit
MECHANISM CONTROL SIGNAL
MECHANISM STOP SIGNAL
COMPARATOR OUT
SAMLE HOLD SIGNAL
A/D DISCHARGE SIGNAL
MECHANISM CONTROL Mi-Com
A/D CONVERTER
NORMAL IND
CrO2 IND
METAL IND
READY IND
REF IND
TEST IND
TAPE POSITION DETECT
DOLBY NR
PB HEAD
Rch

Fig. 4

3. GX-F51 AUTO TUNING FUNCTION DIAGRAM

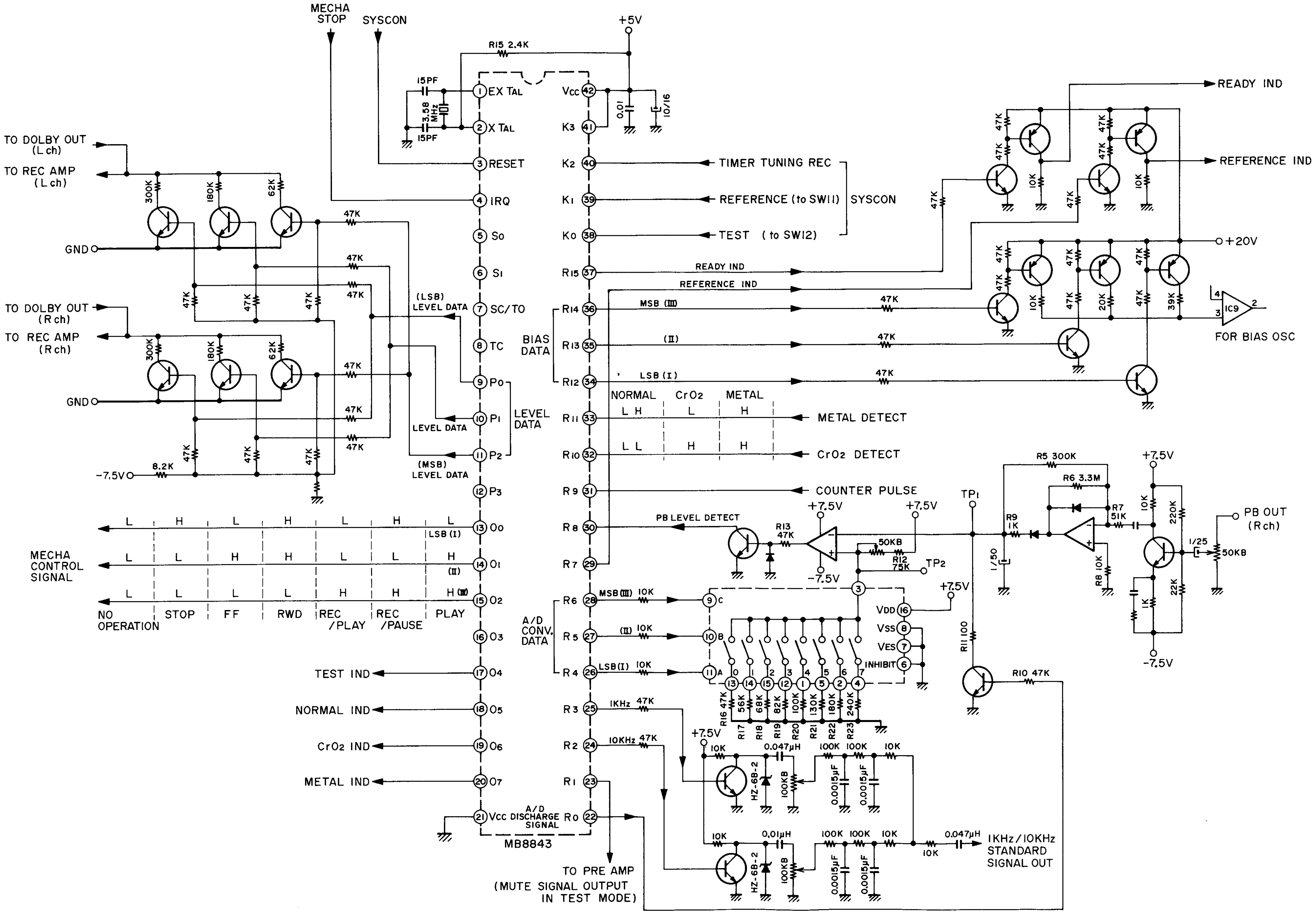
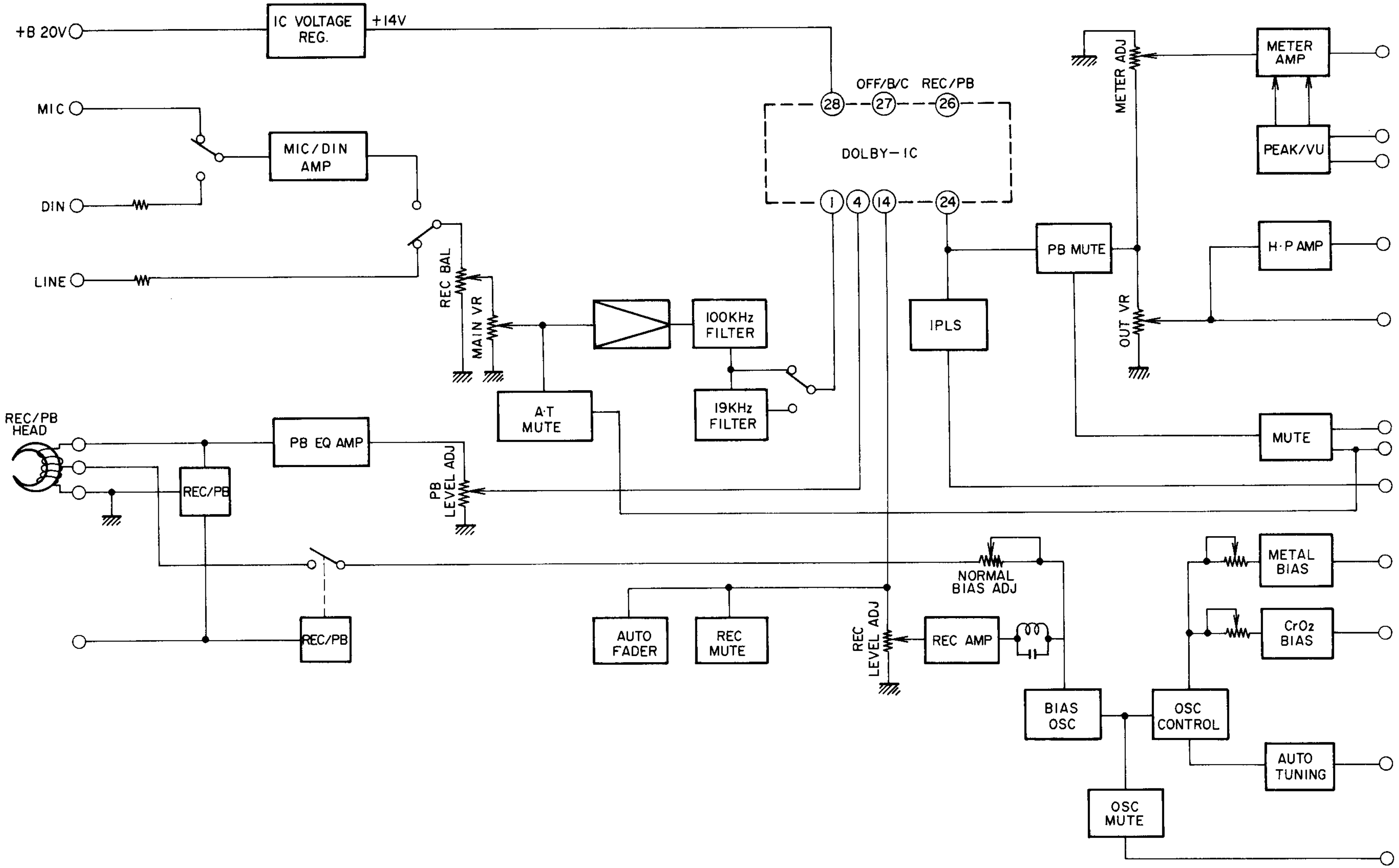

MECHA STOP
SYSCON
+5V
R15 2.4K
15PF
3.58 MHz
15PF
①EX TAL
②X TAL
③RESET
④IRQ
⑤So
⑥Si
⑦SC/TO
⑧TC
⑨Po
⑩P1
⑪P2
⑫P3
⑬Oo
⑭O1
⑮O2
⑯O3
⑰O4
⑱O5
⑲O6
⑳O7
㉑Vcc
Vcc ㊷
K3 ㊶
K2 ㊵
K1 ㊴
Ko ㊳
R15 ㊲
R14 ㊱
R13 ㉟
R12 ㉞
R11 ㉝
R10 ㉜
R9 ㉛
R8 ㉚
R7 ㉙
R6 ㉘
R5 ㉗
R4 ㉖
R3 ㉕
R2 ㉔
R1 ㉓
Ro ㉒
A/D DISCHARGE SIGNAL
MB8843
0.01
10/16
TIMER TUNING REC
REFERENCE (to SW11)
TEST (to SW12)
SYSCON
READY IND
REFERENCE IND
MSB (Ⅲ)
(Ⅱ)
LSB (Ⅰ)
BIAS DATA
47K
READY IND
REFERENCE IND
+20V
IC9
FOR BIAS OSC
10K
20K
39K
NORMAL
CrO2
METAL
L H
L
H
L L
H
H
METAL DETECT
CrO2 DETECT
COUNTER PULSE
PB LEVEL DETECT
R13 47K
+7.5V
-7.5V
50KB
R12 75K
TP2
TP1
R5 300K
R6 3.3M
R7 51K
R9 1K
1/50
R8 10K
10K
220K
22K
1K
1/25
50KB
PB OUT (Rch)
-7.5V
TO DOLBY OUT (Lch)
TO REC AMP (Lch)
TO DOLBY OUT (Rch)
TO REC AMP (Rch)
300K
180K
62K
GND
47K
(LSB) LEVEL DATA
LEVEL DATA
(MSB) LEVEL DATA
LEVEL DATA
-7.5V
8.2K
MECHA CONTROL SIGNAL
L H L H L H L
LSB (Ⅰ)
L L H H L L H
(Ⅱ)
L L L L H H H (Ⅲ)
NO OPERATION
STOP
FF
RWD
REC /PLAY
REC /PAUSE
PLAY
TEST IND
NORMAL IND
CrO2 IND
METAL IND
MSB(Ⅲ) 10K
(Ⅱ) 10K
LSB(Ⅰ) 10K
A/D CONV. DATA
⑨C
⑩B
⑪A
VDD⑯
VSS⑧
VES⑦
INHIBIT⑥
R11 100
R10 47K
R16 47K
R17 56K
R18 68K
R19 82K
R20 100K
R21 130K
R22 180K
R23 240K
1KHz 47K
10KHz 47K
HZ-68-2
100KB
0.047μH
100K
0.0015μF
0.01μH
1KHz/10KHz STANDARD SIGNAL OUT
TO PRE AMP (MUTE SIGNAL OUTPUT IN TEST MODE)

Fig. 5

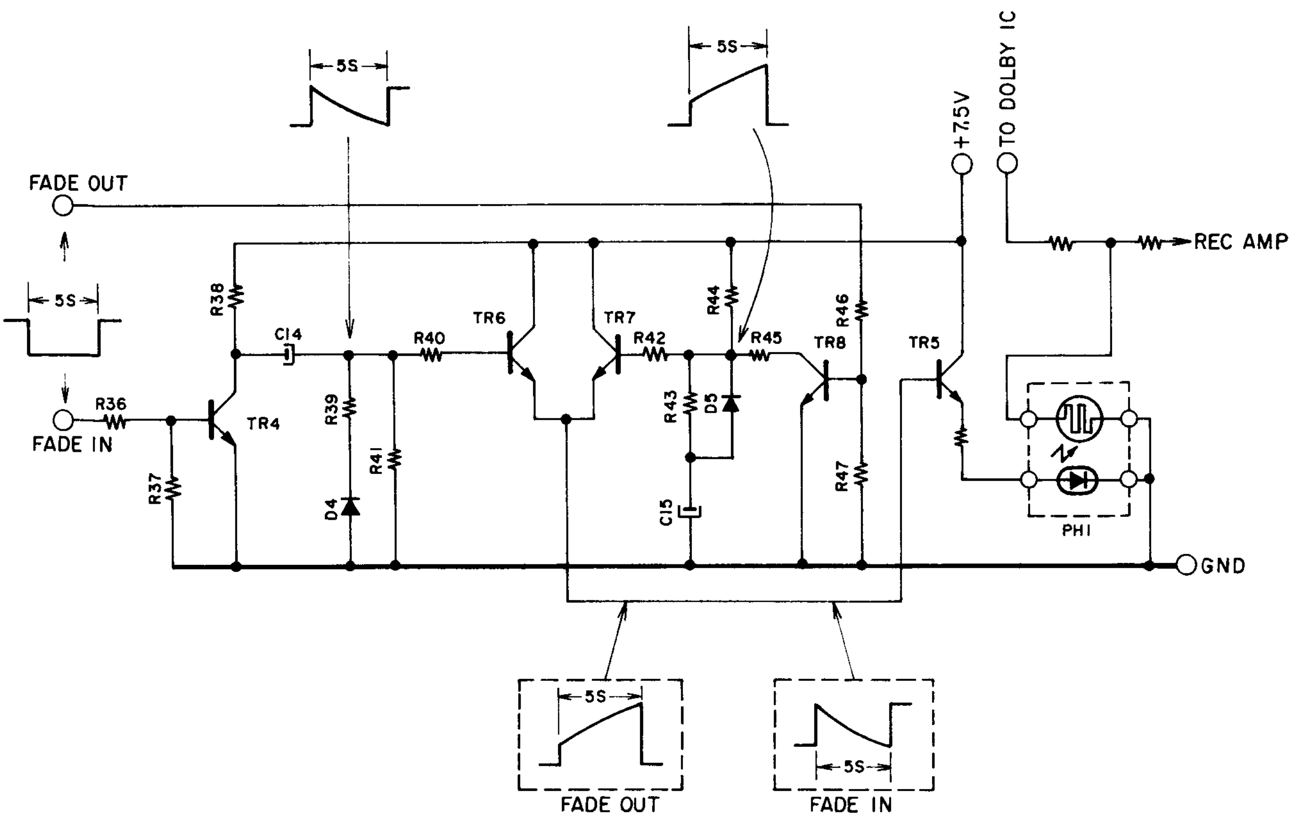
4. GX-F51 PRE AMP BLOCK DIAGRAM


+B 20V
IC VOLTAGE REG.
+14V
MIC
DIN
LINE
MIC/DIN AMP
REC BAL
MAIN VR
100KHz FILTER
19KHz FILTER
A·T MUTE
OFF/B/C
REC/PB
28
27
26
DOLBY— IC
1
4
14
24
IPLS
PB MUTE
METER ADJ
OUT VR
METER AMP
PEAK/VU
H·P AMP
MUTE
REC/PB HEAD
PB EQ AMP
PB LEVEL ADJ
REC/PB
REC/PB
AUTO FADER
REC MUTE
REC LEVEL ADJ
REC AMP
NORMAL BIAS ADJ
BIAS OSC
OSC CONTROL
OSC MUTE
METAL BIAS
CrO2 BIAS
AUTO TUNING

Features; Circuit of REC-PB is switched in DOLBY IC.
Switching of DOLBY-OFF, DOLBY-B, DOLBY-C are made in DOLBY IC.

Fig. 6

IV. AUTO FADER CIRCUIT



FADE OUT
FADE IN
5S
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
C14
C15
D4
D5
TR4
TR5
TR6
TR7
TR8
+7.5V
TO DOLBY IC
REC AMP
PH1
GND

Fig. 7

Functions (Symbol numbers of GX-F71 are used to explain, but the function of GX-F51 is same as the function of GX-F71).

1. FADE IN; When AUTO FADER is depressed in REC PAUSE mode, the fade-in terminal becomes "L" level for about 5 seconds. Then, TR4 is turned off and TR4's collector becomes "H" level and, therefore, an excessive current flows through C14. This excessive current is discharged at R41, 68K. By using this discharge curve, the current flowing through photo sensor (MCD7213P) is reduced gradually.

   o Photo sensor; The internal resistance is changed by the current which flows through the diode in the sensor. The more current flows, the less resistance becomes and the less current flows, the more resistance becomes.

2. FADE OUT; When AUTO FADER is depressed in REC mode, the FADE OUT terminal becomes "L" level for about 5 sec.

   Then, since TR8 is turned off, C15 is electrically charged through R44 and R43. By using the charging curve, the current flowing through the photo sensor is increased gradually.

V. CAM MOTOR DRIVE CIRCUIT

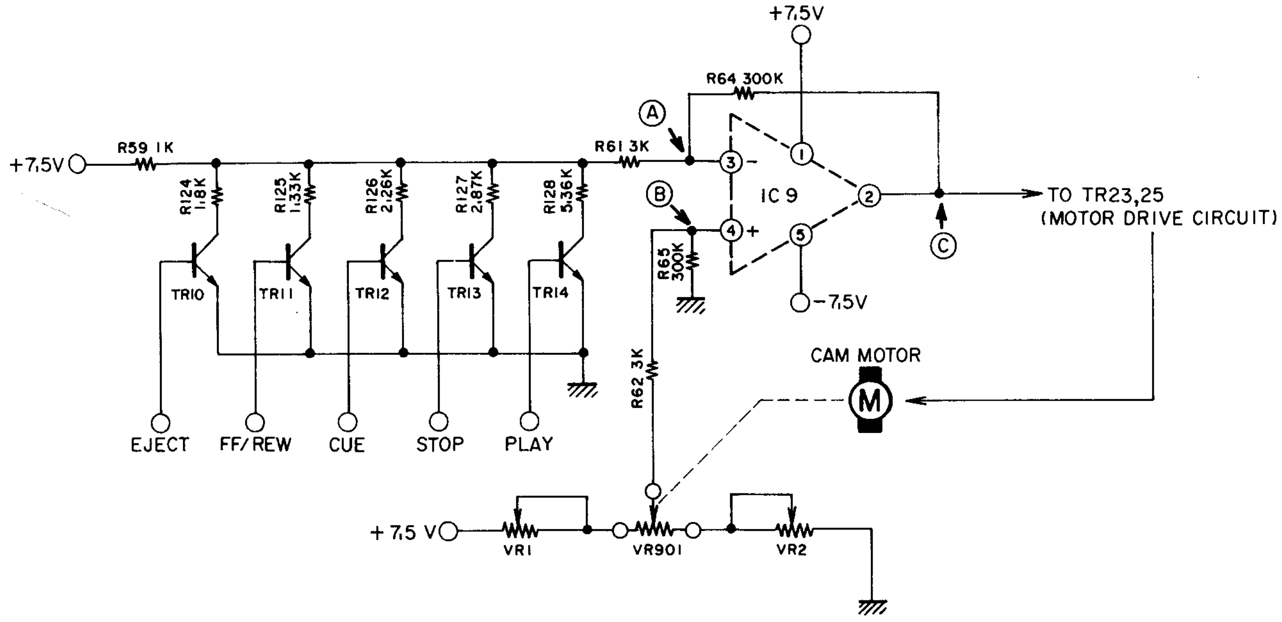

+7.5V
R64 300K
Ⓐ
R59 1K
+7.5V
R61 3K
3
1
2
IC 9
4
5
Ⓑ
-7.5V
TO TR23,25
(MOTOR DRIVE CIRCUIT)
Ⓒ
R124 1.8K
R125 1.33K
R126 2.26K
R127 2.87K
R128 5.36K
R65 300K
TR10
TR11
TR12
TR13
TR14
R62 3K
CAM MOTOR
M
EJECT
FF/REW
CUE
STOP
PLAY
+7.5 V
VR1
VR901
VR2

Fig. 8 Motor Revolution Indication Circuit

The cam motor is used for the operation of mechanism. It determines the position of the head base in each mode; power eject mode and auto loading mode. (Plunger used to be employed for this operation.)

Circuit functions (Symbol numbers of GX-F71 are used for the explanation, but the functions are same as those of GX-F31/F51).

TR10 ~ TR14 are turned on by the signal from IC8 (MICOM) in each mode.

By the difference in the value of resistances of R124 ~ R128, the voltage at point Ⓐ is determined in each mode and this voltage is used as the standard voltage of OP Amp (IC9).

At IC9, the voltage at point Ⓐ is compared with that at point Ⓑ and when Ⓐ > Ⓑ, point Ⓒ becomes "L" (−7V) and when Ⓐ < Ⓑ, point Ⓒ becomes "H" (+7V) and when Ⓐ = Ⓑ, point Ⓒ becomes "0" (Approx. −3V ~ +3V).

Supposing that point Ⓒ is "H" (+7V).

TR23 "ON" → TR24 "OFF" → TR30 "OFF" → TR19 "OFF" and the collector of TR19 becomes "H" while at the same time, TR25 "ON" → TR29 "OFF" → TR20 "ON" and the collector of TR20 becomes "L". Therefore, the motor turns.

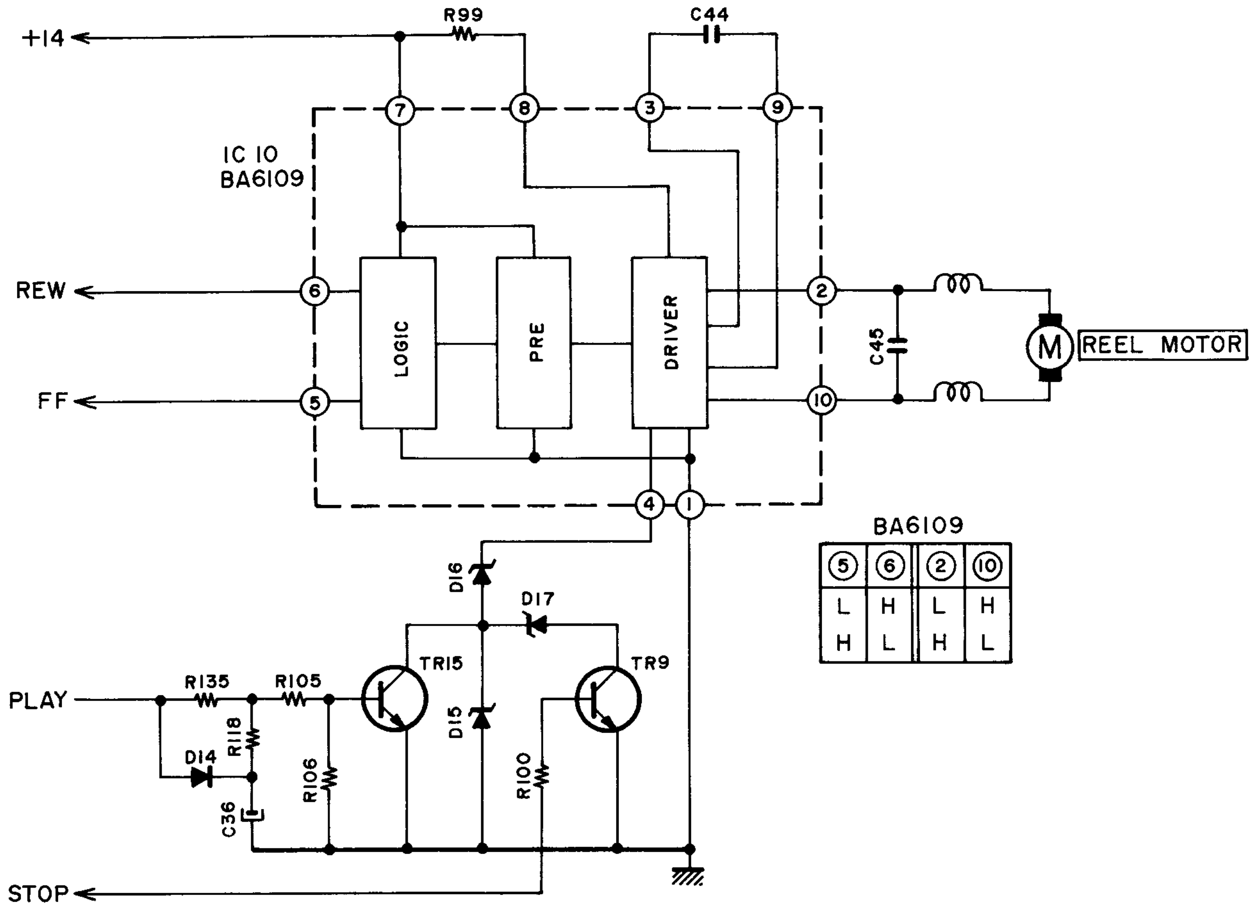
Since the cam motor and VR901 are interlock each other, the voltage at point Ⓑ is changed as the motor turns. The motor stops when the voltage at point Ⓐ becomes equal to the voltage at point Ⓑ, that is, when the voltage at point Ⓒ becomes "0".

While point Ⓒ is "L" (−7V), the on/off of TR is reverse direction.

TR31 and 32 are provided for shorting both ends of motor and applying brakes when the voltage at point Ⓒ is "0".

When point Ⓒ is "H" or "L", "H" is applied to IC7 ⑨ and IC7 ⑩ becomes "L" and then TR33 "OFF" → TR31 and 32 "OFF" and, therefore, both ends of motor are not shorted. When point Ⓒ is "0", IC7 ⑨ is "L" and IC7 ⑩ "H" → TR33 "ON" → TR31 and 32 "ON" and, consequently, both ends of motor are shorted and brake is applied.

VI. REEL MOTOR DRIVE CIRCUIT


+14
R99
C44
⑦
⑧
③
⑨
IC 10
BA6109
REW
FF
⑥
⑤
LOGIC
PRE
DRIVER
②
⑩
C45
M
REEL MOTOR
④
①
D16
D17
TR15
TR9
PLAY
R135
R105
R118
D14
R106
D15
R100
C36
STOP

BA6109

⑤	⑥	②	⑩
L	H	L	H
H	L	H	L

Fig. 9 GX-F71 Reel Motor Drive Circuit

Functions

IC10 ⑥ is "H" in REW mode and then ⑩: H and ②: L and the motor turns in the reverse direction.
IC10 ⑤ is "H" in FF mode and the ②: "H" and ⑩: "L" and the motor turns in the normal direction.
In the PLAY mode, IC10 ⑤ becomes "H" and the motor turns, but voltage ④ changes to voltage (5V) D16 as TR15 is turned on and voltage ② is reduced to 5V, thus determining the take up tension.
With GX-F51, F31, FF input is ⑥ and REW input is ⑤.
Only the outputs of ② and ⑩ are reversed and the function remains unchanged.

SECTION 2

SERVICE MANUAL

MODEL GX-F31

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II. CONTROLS 2- 3
III. PRINCIPAL PARTS LOCATION 2- 4
IV. VOLTAGE AND CYCLE CONVERSION 2- 5
V. MECHANICAL ADJUSTMENT 2- 6
VI. HEAD ADJUSTMENT 2- 9
VII. AMPLIFIER ADJUSTMENT 2-11
VIII. DC RESISTANCE OF HEADS 2-13
IX. CLASSIFICATION OF VARIOUS P.C BOARDS 2-13
    1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS 2-13
    2. COMPOSITION OF VARIOUS P.C BOARDS 2-14

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

TRACK SYSTEM	4 Track 2 Channel Stereo System
TAPE	Philips Type Cassette
TAPE SPEED	4.76 cm/s ± 1.0% (1-7/8 ips. ± 1.0%)
HEADS	Twin Field Super GX head for recording/playback x 1 Erase head x 1
MOTORS	FG servo D.C. motor for direct capstan drive x 1 D.C. motor for reel drive x 1
WOW & FLUTTER	0.10% WTD (DIN) 0.035% WRMS
TAPE WINDING TIME	90 sec. using a C-60 cassette tape
FREQUENCY RESPONSE	Normal: 20 to 17,000 Hz ±3 dB CrO$_2$. 20 to 18,000 Hz ±3 dB Metal: 20 to 19,000 Hz ±3 dB
FREQUENCY RANGE	Normal: 15 to 18,000 Hz CoO$_2$: 15 to 20,000 Hz Metal: 15 to 21,000 Hz
SIGNAL TO NOISE RATIO	Metal: 60 dB (measured via tape with peak recording level) Dolby B-type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz Dolby C-type NR switch ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz
HARMONIC DISTORTION	1 kHz, 3rd harmonic distortion Metal: 0.8%
INPUT	MIC: 0.25 mV (600 ohms) Line: 70 mV (47 kohms)
OUTPUT	Line. 410 mV (less than 2 kohms) Phone: 1.3 mW (8 ohms)
DIN	Input: 2.0 mV (10 kohms) Output: 410 mV
POWER REQUIREMENTS	100V, 50/60 Hz for Japan 120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK and Australia 110V/120V/220V/240V, 50/60 Hz switchable for other countries.
POWER CONSUMPTION	U, C, A Models 22W J Model 20W
DIMENSIONS	440(W) x 100(H) x 345(D) mm (17.3 x 3.9 x 13.6")
WEIGHT	5.8 kg (12.8 lbs)

* For improvement purposes, specifications and design are subject to change without notice.
* "Dolby" and the Double D symbol are trademarks of Dolby Laboratories.
(Manufactured under license from Dolby Laboratories).

II. CONTROLS

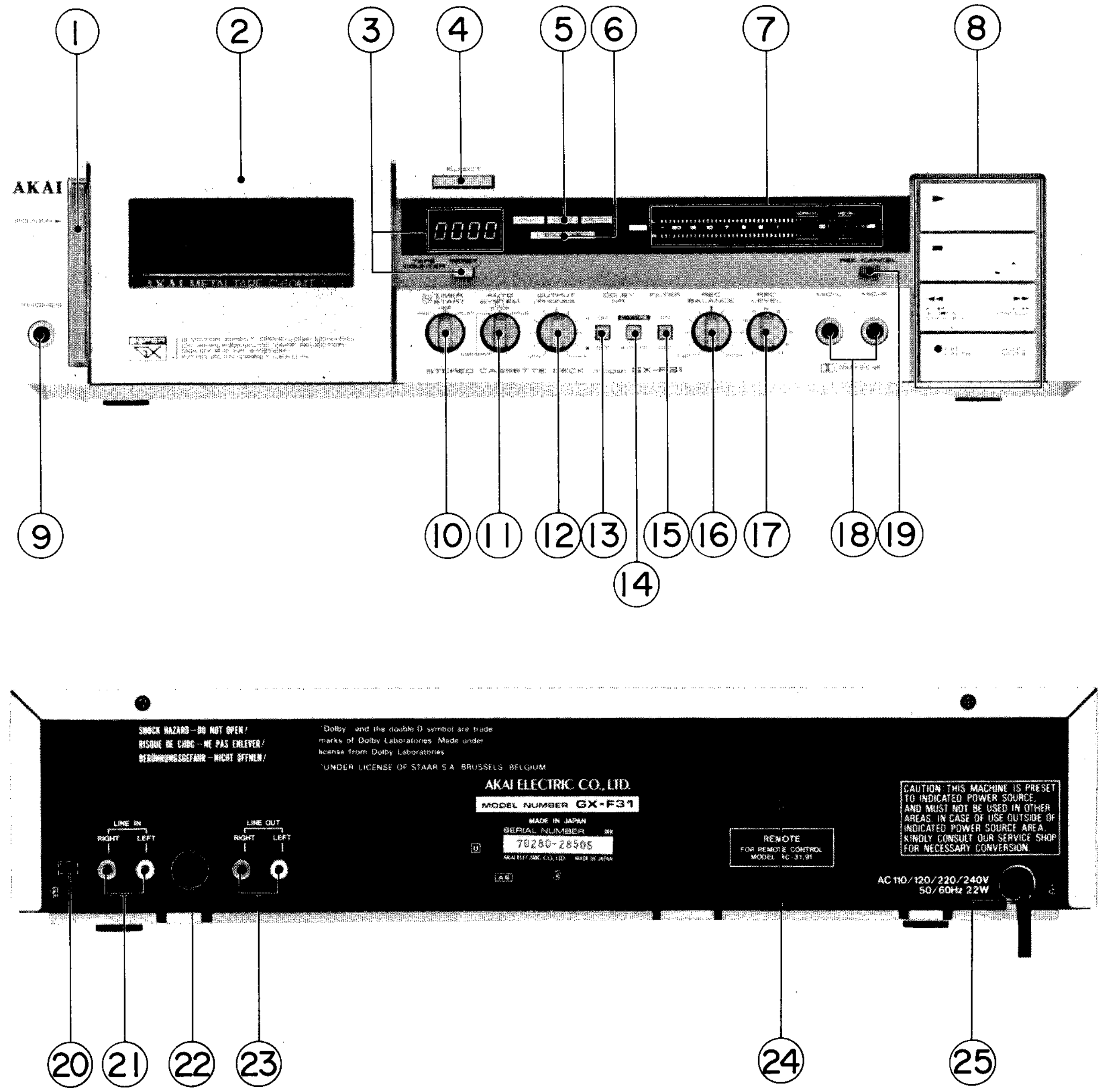

1
2
3
4
5
6
7
8
AKAI
9
10
11
12
13
14
15
16
17
18
19
SHOCK HAZARD—DO NOT OPEN!
RISQUE DE CHOC—NE PAS ENLEVER!
BERÜHRUNGSGEFAHR—NICHT ÖFFNEN!
AKAI ELECTRIC CO., LTD.
MODEL NUMBER GX-F31
MADE IN JAPAN
SERIAL NUMBER
LINE IN
RIGHT
LEFT
LINE OUT
RIGHT
LEFT
REMOTE
FOR REMOTE CONTROL
CAUTION THIS MACHINE IS PRESET TO INDICATED POWER SOURCE, AND MUST NOT BE USED IN OTHER AREAS. IN CASE OF USE OUTSIDE OF INDICATED POWER SOURCE AREA, KINDLY CONSULT OUR SERVICE SHOP FOR NECESSARY CONVERSION.
AC 110/120/220/240V
50/60Hz 22W
20
21
22
23
24
25

Fig. 1 Controls

1. POWER SWITCH
2. CASSETTE RECEPTACLE
3. FLD TAPE COUNTER and RESET BUTTON
4. EJECT BUTTON
5. TAPE POSITION INDICATOR
6. DOLBY NR INDICATOR
7. FLD BAR METER with MAXIMUM INPUT LEVEL INDICATORS
8. OPERATING BUTTONS
   PLAY (▶) BUTTON with INDICATOR
   STOP (■) BUTTON
   REWIND (◀◀) BUTTON
   FAST FORWARD (▶▶) BUTTON
   RECORDING (REC)/PAUSE BUTTON with INDICATOR
   AUTO MUTE BUTTON
9. HEADPHONE (PHONES) JACK
10. TIMER START SELECTOR
11. AUTO SYSTEM SELECTOR
12. OUTPUT/HEADPHONE (PHONES) CONTROL
13. DOLBY NR SWITCH
14. DOLBY NR SELECTOR
15. MPX FILTER SWITCH
16. RECORDING (REC) BALANCE CONTROL (LEFT and RIGHT)
17. RECORDING (REC) LEVEL CONTROL
18. MICROPHONE JACKS (MIC-L: left, MIC-R: right)
19. RECORDING (REC) CANCEL BUTTON
20. LINE/DIN SELECTOR
    (Some models do not have this facility.)
21. LINE IN JACKS
22. DIN JACK
    (Some models are not equipped with this facility.)
23. LINE OUT JACKS
24. REMOTE JACK
25. POWER CORD

III. PRINCIPAL PARTS LOCATION

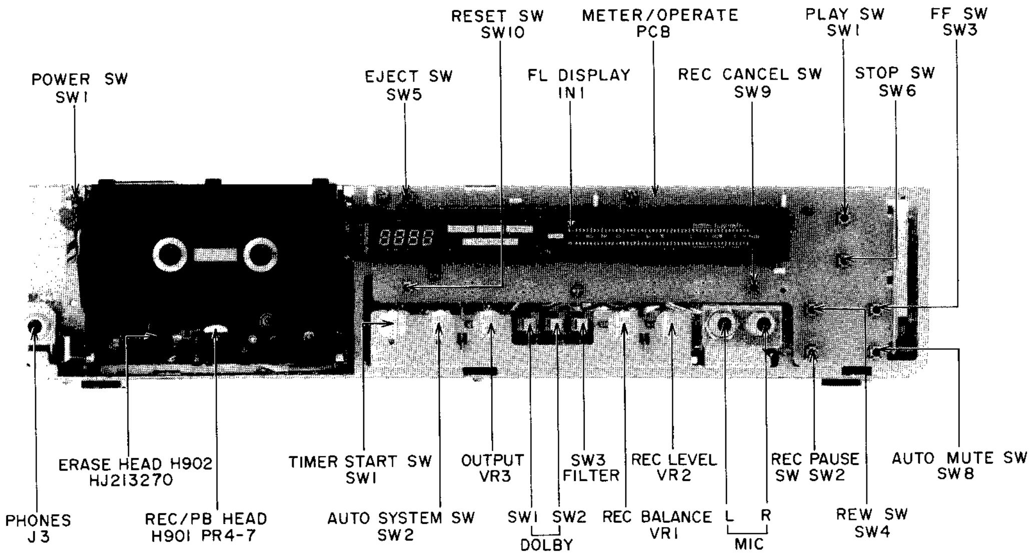

RESET SW
SW10
METER/OPERATE
PCB
PLAY SW
SW1
FF SW
SW3
POWER SW
SW1
EJECT SW
SW5
FL DISPLAY
IN1
REC CANCEL SW
SW9
STOP SW
SW6
ERASE HEAD H902
HJ213270
TIMER START SW
SW1
OUTPUT
VR3
SW3
FILTER
REC LEVEL
VR2
REC PAUSE
SW SW2
AUTO MUTE SW
SW8
PHONES
J3
REC/PB HEAD
H901 PR4-7
AUTO SYSTEM SW
SW2
SW1 SW2
DOLBY
REC BALANCE
VR1
L R
MIC
REW SW
SW4

Fig. 2 Front View

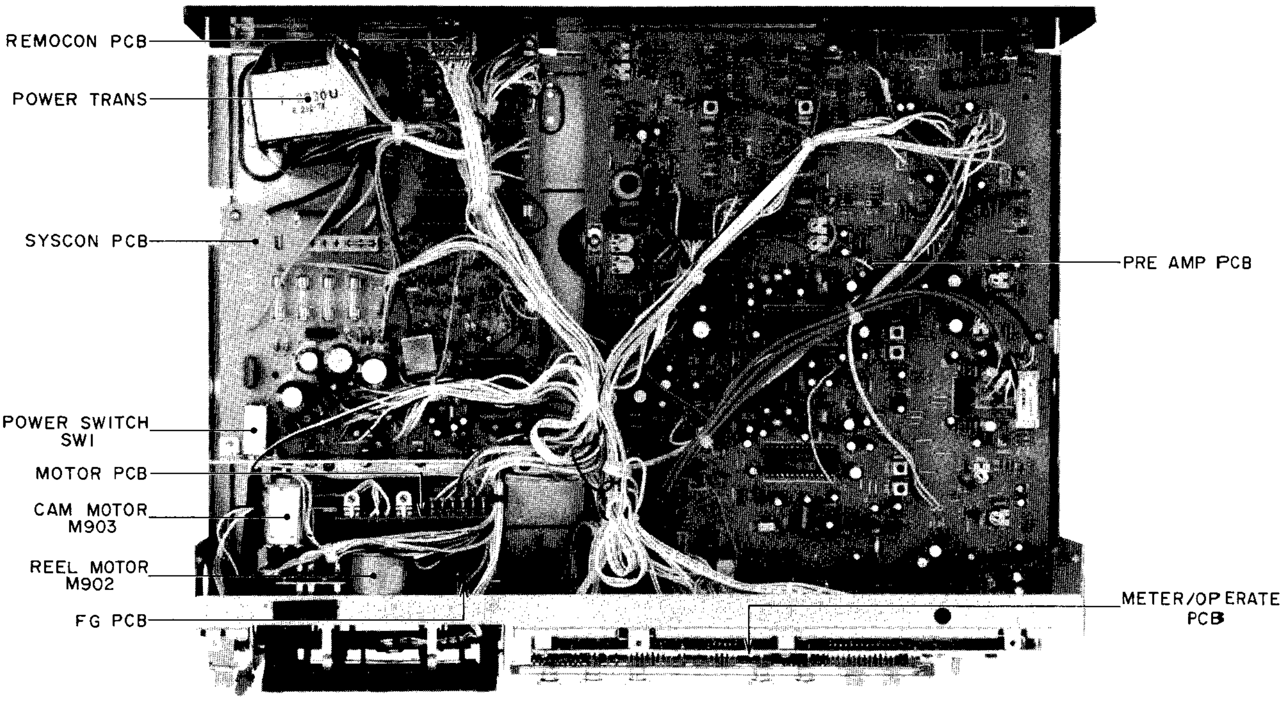

REMOCON PCB
POWER TRANS
SYSCON PCB
POWER SWITCH
SW1
MOTOR PCB
CAM MOTOR
M903
REEL MOTOR
M902
FG PCB
PRE AMP PCB
METER/OPERATE
PCB

Fig. 3 Top View

IV. VOLTAGE AND CYCLE CONVERSION

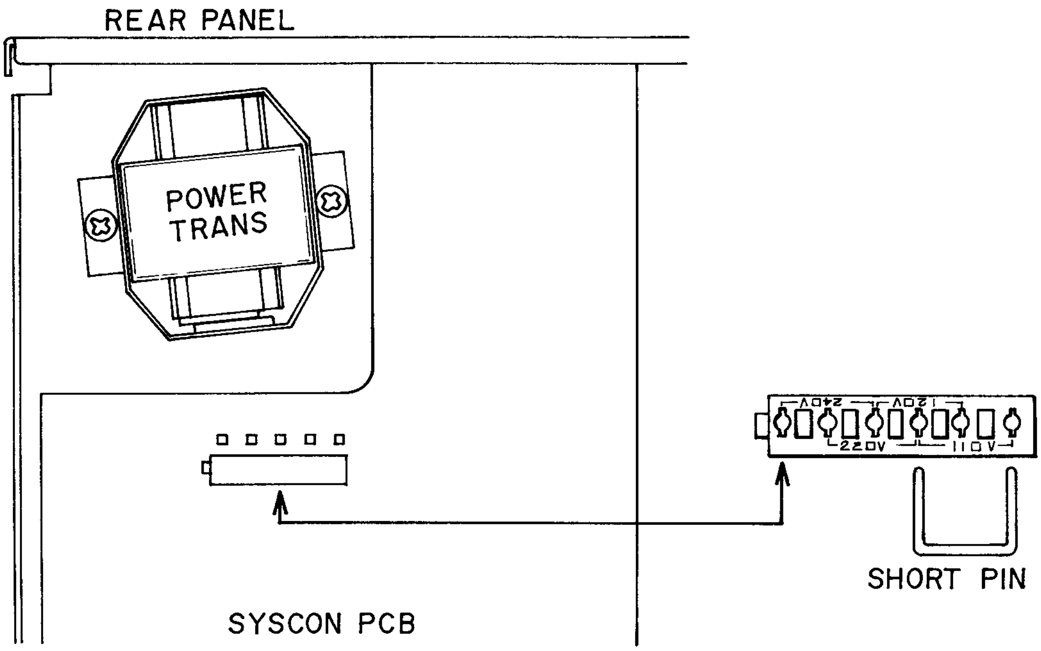


Fig. 4 Voltage Conversion (U Model only)

1. VOLTAGE CONVERSION

Models for Canada, Europe, USA, UK and Australia are not equipped with this facility.

Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V or 240V as required.

If voltage change is necessary, this can be accomplished as follows:

1) Disconnect power cord.
2) Loosen holding screws and remove upper cover.
3) Remove short pin plug from present holes and replace in correct holes. Follow the markings explicitly.

2. CYCLE CONVERSION

With DC motor, cycle conversion is not necessary.

V. MECHANICAL ADJUSTMENT

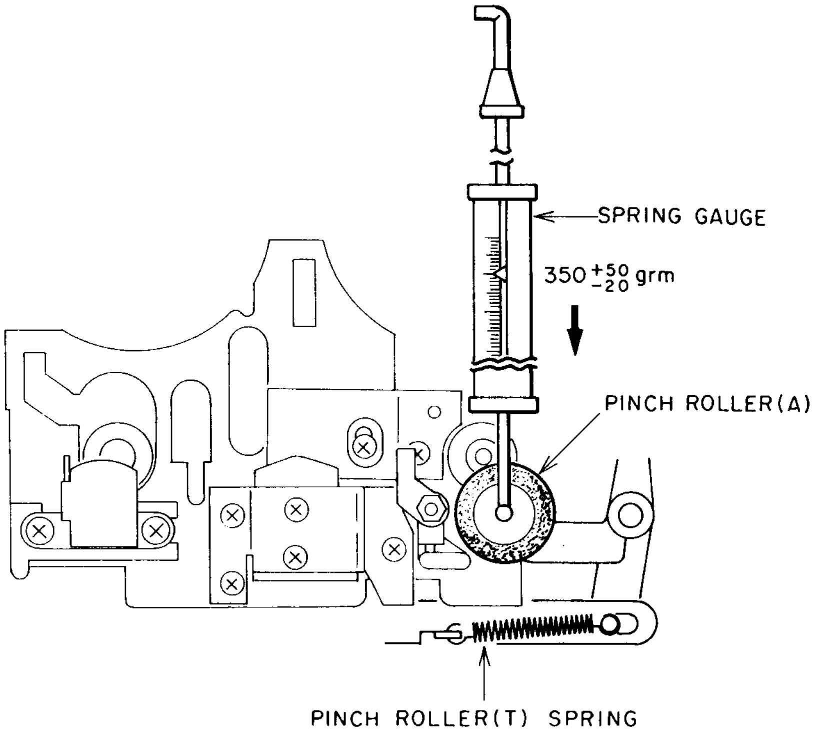

SPRING GAUGE
350^{+50}_{-20} grm
PINCH ROLLER(A)
PINCH ROLLER(T) SPRING

Fig. 5

1. PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 5)

Put in PLAY mode. Push pinch roller arm down with the spring gauge push the pinch roller 1 ~ 2 mm from the capstan and release slowly. Read the spring gauge at the moment the pinch roller touches the capstan and begins to rotate.

Specified pressure: 350^{+50}_{-20} grm. If there is no measurement obtained, replace the pinch roller spring.

2. TAPE SPEED ADJUSTMENT

Play Back a 1,000 Hz (TF-102CS) Pre-Recorded test tape, and Adjust tape Speed Adjustment Volume (VR1 50K) to obtain a tape speed of 1,000 Hz ± 1.0%.

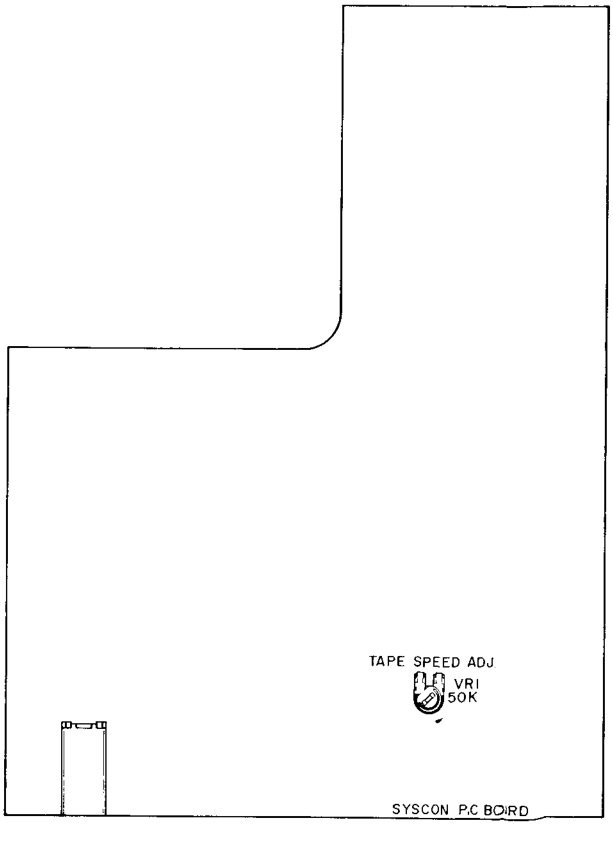

TAPE SPEED ADJ.
VR1
50K
SYSCON P.C BOARD

Fig. 6 Syscon P.C Board Adjustment Point

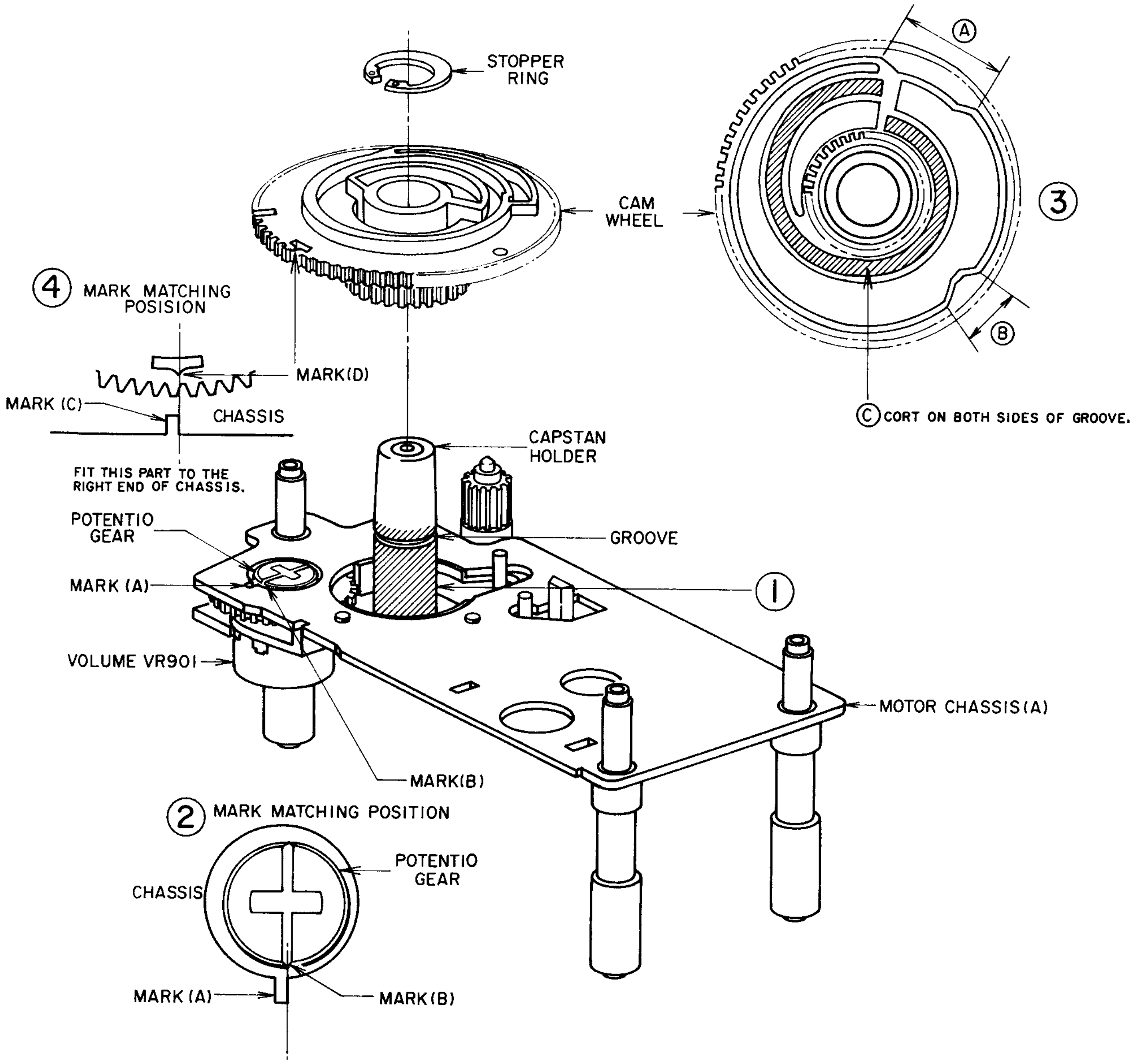

STOPPER RING
CAM WHEEL
Ⓐ
③
Ⓑ
Ⓒ CORT ON BOTH SIDES OF GROOVE.
④ MARK MATCHING POSISION
MARK(D)
MARK (C)
CHASSIS
FIT THIS PART TO THE RIGHT END OF CHASSIS.
CAPSTAN HOLDER
POTENTIO GEAR
GROOVE
MARK (A)
①
VOLUME VR901
MOTOR CHASSIS(A)
MARK(B)
② MARK MATCHING POSITION
CHASSIS
POTENTIO GEAR
MARK (A)
MARK(B)

Fig. 7

3. HOW TO INSTALL VOLUME (VR901) AND CAM WHEEL

1) Apply Molybdenum coat on the capstan holder
   Apply Molybdenum coat on the area of 360° from the bottom to the upside 2 mm of groove as shown in the figure. (Fig. 7-①)
2) Fitting position volume (potentio gear)
   Fit the right end of Mark (A) to the center of Mark (B) as shown in the figure. (Fig. 7-②)
3) Apply Molybdenum coat on Ⓐ, Ⓑ and Ⓒ shown in Fig. 7- ③.
4) Set the cam wheel on the capstan wheel
   (Ensure that the cam wheel and potentio gear are meshed properly). When the cam wheel is set properly, fit the center of Mark (D) to the right end of Mark (C). (Fig. 7-④)
5) Fit the stopper ring in the groove of the capstan holder.

CAUTIONS:

1. Make sure that the teeth on the periphery of cam wheel and the cam are absolutely free from any scratch, flaw, cut, etc.
2. Make sure that Molybdenum coat is applied on the specified area only.

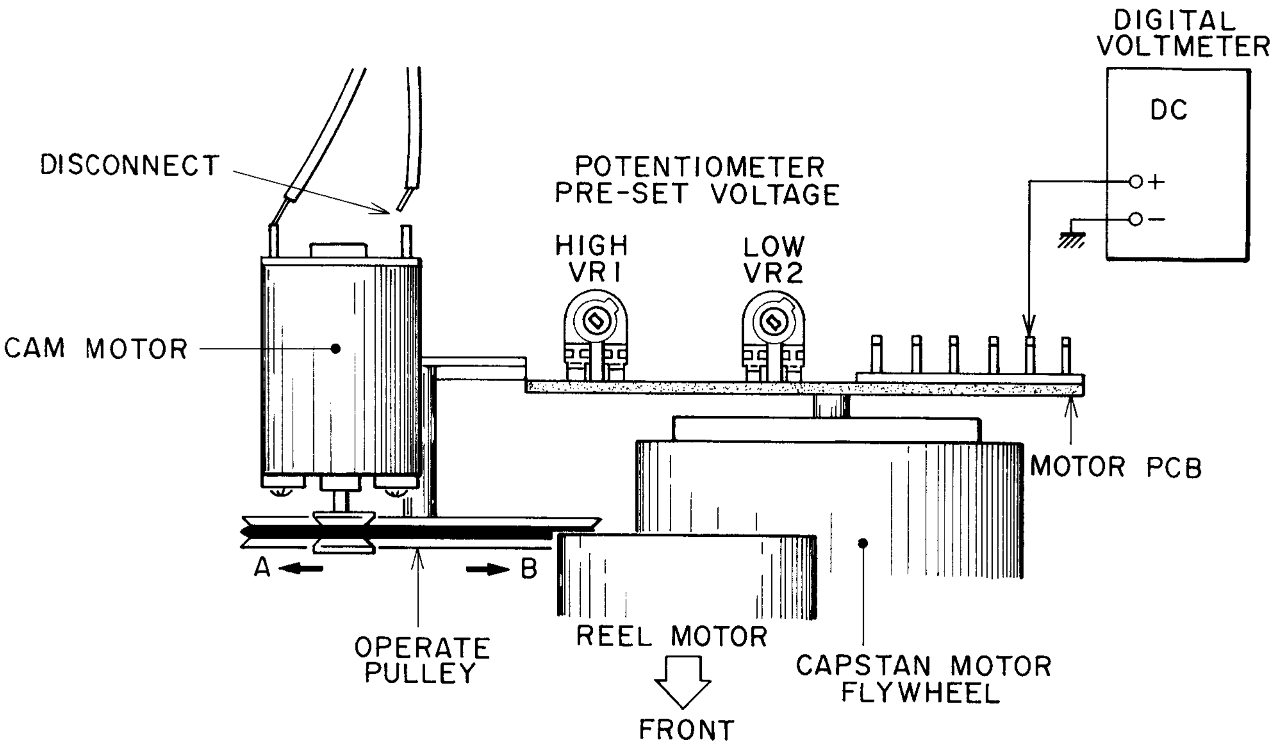

DIGITAL VOLTMETER
DC
+
−
DISCONNECT
POTENTIOMETER PRE-SET VOLTAGE
HIGH VR1
LOW VR2
CAM MOTOR
MOTOR PCB
A
B
OPERATE PULLEY
REEL MOTOR
FRONT
CAPSTAN MOTOR FLYWHEEL

Fig. 8-1

4. POTENTIOMETER PRESET VOLTAGE ADJUSTMENT

1) LOW VOLTAGE ADJUSTMENT

a. With power OFF, remove the connecting cord of the cam motor and turn the operate pulley fully with your fingers in A direction.

b. Connect the digital voltmeter as shown in Fig. 8-1.

c. With power ON, adjust VR2 so that the voltage reading will be 0.78V (DC).

2) HIGH VOLTAGE ADJUSTMENT

a. With power OFF, turn the operate pulley fully with your fingers in B direction.

b. With power ON, adjust VR1 so that the voltage reading will be 6.73V (DC).

3) Repeat Items 1) and 2).

4) a. With Power OFF, connect the connecting cord of the motor.

b. Remove the digital voltmeter.

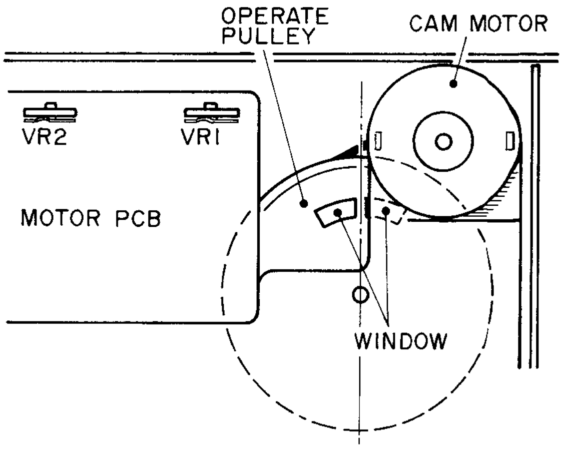

OPERATE PULLEY
CAM MOTOR
VR2
VR1
MOTOR PCB
WINDOW

Fig. 8-2 Position of Operate Pulley in STOP Mode

5) a. Set power to ON.

b. Adjust VR1 slightly so that a center line between windows of the operate pulley will face directly above during STOP Mode. (Fig. 8-2)

c. Remove the cassette lid and set the AUTO SYSTEM switch to IPLS Mode.

d. Confirm that the head and pinch roller do not move up and down when the FF and REW switches are alternately depressed.

e. Turn the reel with fingers in STOP Mode to check that the brake works sufficiently. When the brake acts normally, the take-up reel does not turn clockwise while the supply reel does not rotate counterclockwise.

VI. HEAD ADJUSTMENT

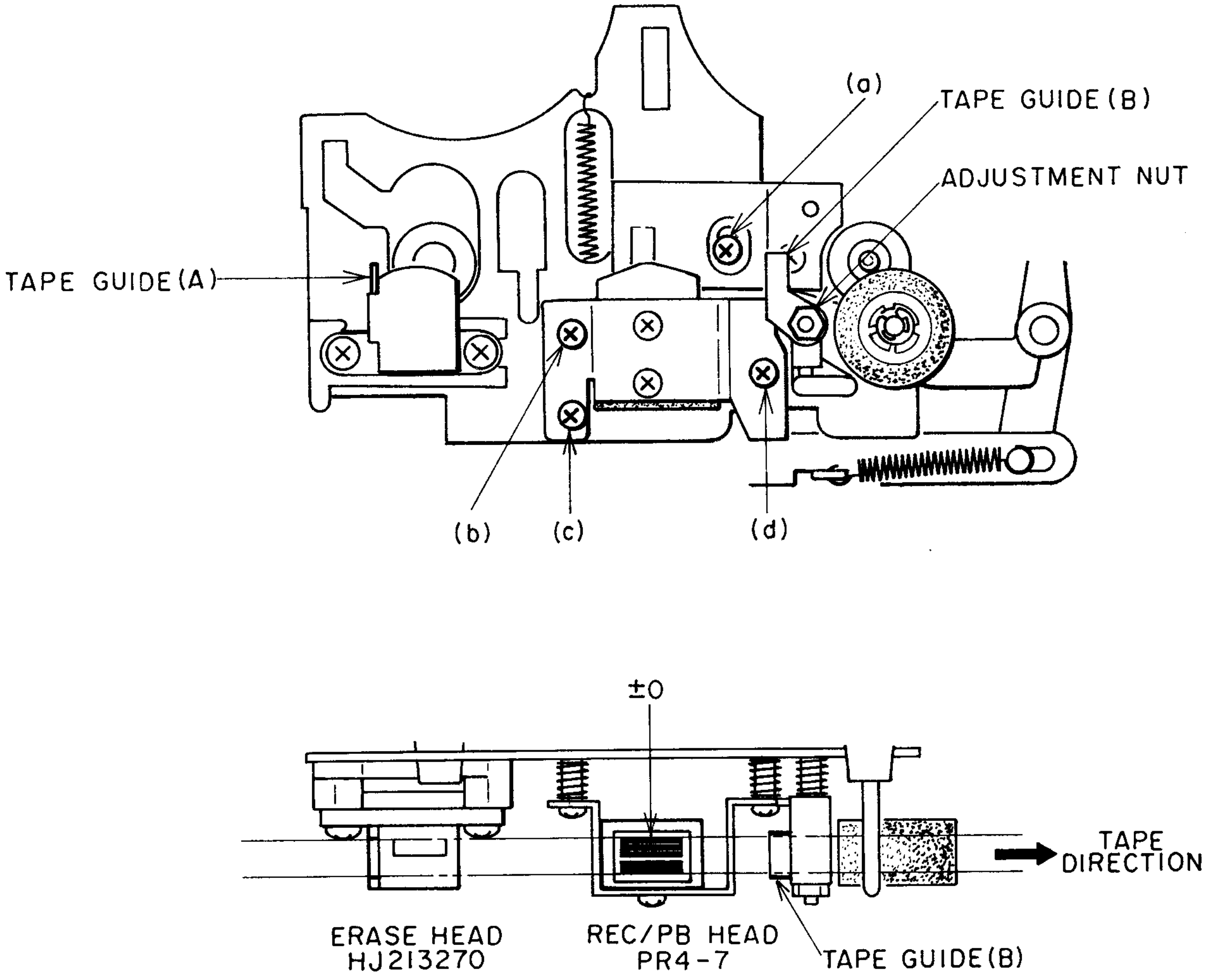

(a)
TAPE GUIDE (B)
ADJUSTMENT NUT
TAPE GUIDE (A)
(b)
(c)
(d)
±0
TAPE DIRECTION
ERASE HEAD
HJ213270
REC/PB HEAD
PR4-7
TAPE GUIDE (B)

Fig. 9

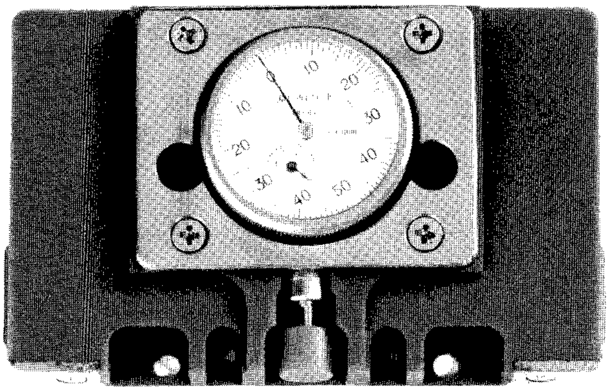


Fig. 10 Cassette Head Projection Gauge (TF-111CJ)

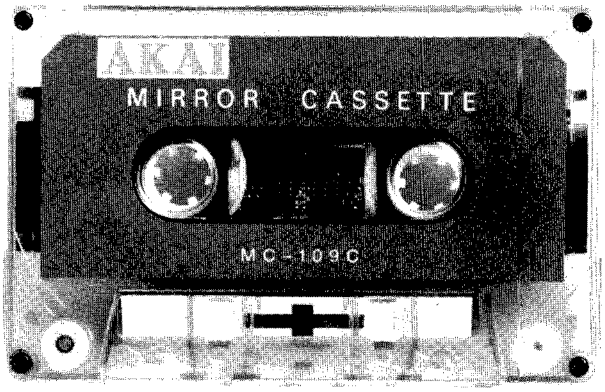

AKAI
MIRROR CASSETTE
MC-109C

Fig. 11 Mirror Cassette Tape (TF-109CM)

1. REC/PB HEAD PROJECTION ADJUSTMENT

Set the cassette head projection gauge (TF-111CJ) and set to PLAY mode. Loosen the screw (a) and adjust so that the gauge indication at that time will be 3.2 ± 0.05 mm. After adjustment, apply paintlock on the screw (a).

2. TAPE GUIDE HEIGHT ADJUSTMENT

1) Set the mirror cassette tape (TF-109CM) and set to PLAY mode.
2) Using the tape guide (A) as reference height, adjust the tape guide (B) so that the tape runs smoothly and is not hitched by the tape guide. For the adjustment, use the adjustment nut. After adjustment, apply paintlock on the adjustment nut.

3. REC/PB HEAD HEIGHT ADJUSTMENT

1) Set the mirror cassette tape and set to PLAY mode.
2) Adjust screws (b), (c) and (d) so that the upper edge of the REC/PB head L-ch core is in alignment with the upper side of the tape.
3) Playback the head height adjustment tape (4Tr 1,000 Hz) (TF-103CF) and fine-adjust the screws (b), (c) and (d) so that the largest output is obtained for both channels.

4. REC/PB HEAD AZIMUTH ALIGNMENT ADJUSTMENT

1) Playback a 10 kHz head azimuth alignment tape (TF-106CH) and adjust the screw (d) until the output level of both channels is maximum.
2) After adjustment, better to check again head height and azimuth alignment.
3) After adjustment, paintlock the screws (b), (c) and (d).

NOTES:

1. Be sure to clean the heads prior to head adjustment.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Be sure to demagnetize the heads with a Head Demagnetized before and after head adjustment.

VII. AMPLIFIER ADJUSTMENT

* ⌒ direction increases the level (bias will be shallower)

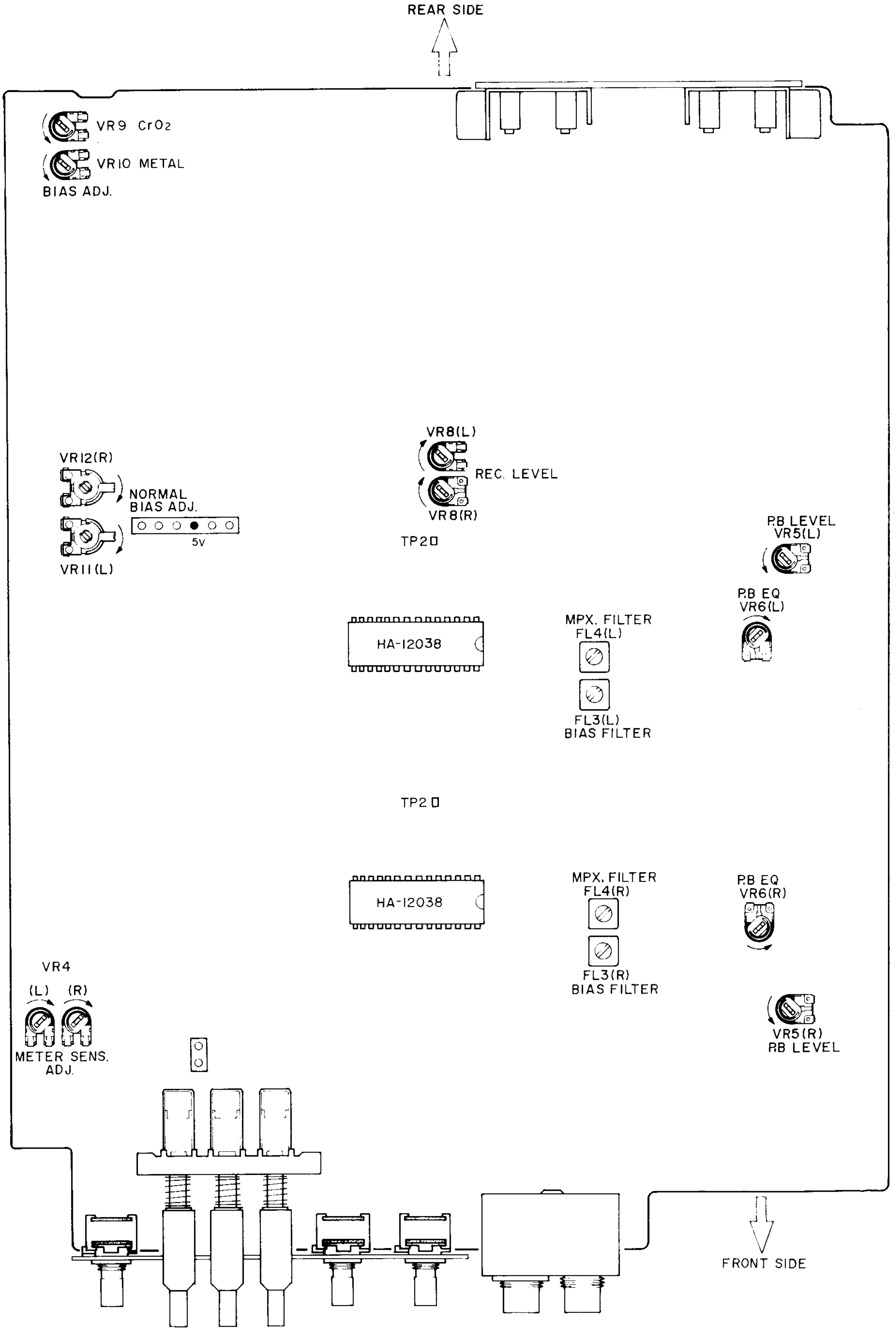

REAR SIDE
VR9 CrO2
VR10 METAL
BIAS ADJ.
VR8(L)
REC. LEVEL
VR8(R)
VR12(R)
NORMAL
BIAS ADJ.
5V
VR11(L)
TP2
P.B LEVEL
VR5(L)
P.B EQ
VR6(L)
MPX. FILTER
FL4(L)
HA-12038
FL3(L)
BIAS FILTER
TP2
HA-12038
MPX. FILTER
FL4(R)
FL3(R)
BIAS FILTER
P.B EQ
VR6(R)
VR5(R)
P.B LEVEL
VR4
(L) (R)
METER SENS.
ADJ.
FRONT SIDE

Fig. 12 Pre-Amp P.C Board Adjustment Point

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Parts	Result	Remarks
1	PB Level	333 Hz (TF-101CL)	PB	VR5	−5.5 ± 0.2 dBm (410 mV)	
2	PB EQ	10 kHz (TF-106CH)	PB	VR6	−22.5 ± 1.5 dBm	
3	Normal Position Frequency Response	Normal Blank Tape 1 kHz, 10 kHz −22.5 dBm	REC/PB	VR11	1 kHz to 10 kHz flat response	
4	CrO_2 Position Frequency Response	CrO_2 Blank Tape 1 kHz, 10 kHz −25.5 dBm	REC/PB	VR9	1 kHz to 10 kHz flat response	
5	Metal Position Frequency Response	Metal Blank Tape 1 kHz, 10 kHz −25.5 dBm	REC/PB	VR10	1 kHz to 10 kHz flat response	
6	REC Level	Normal Blank Tape 1 kHz, − 5.5 dBm	REC/PB	VR8	−5.5 ± 0.3 dBm (410 mV)	
7	MPX Filter	19 kHz from oscillator	REC	FL4	Minimum Output	MPX Filter ON
8	Bias Filter	No Signal Input	REC	FL3	Minimum Output	Set REC Volume to maximum
9	Meter Sensitivity	1 kHz, −5.5 dBm from oscillator	REC	VR4	0 dB Indication	+1VU puts out the light in Line out −5.2 dBm

NOTES: 1. Except for Step 7 set MPX Filter Switch to OFF Position.
2. Use the following cassette measuring tapes:
Normal Tape : Maxell UD C-60
CrO_2 Tape : TDK SA C-60
Metal Tape : TDK MA-C C-60

For your reference:

Confirmation of Dolby level

1) Set to REC/PAUSE.
2) Input a signal of 400 Hz and adjust the input level so that the level of pin ㉔ of Dolby I.C (HA-12038) will be 580 mV when Dolby NR is OFF.
3) Check that the level of TP-2 is 580 mV.

VIII. DC RESISTANCE OF HEADS

Description	Name	DC Resistance
REC/PB Head	PR4-7	650 ohms ± 10%
Erase Head	HJ213270	3.5 ohms

IX. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Pre Amp P.C Board	T2029A501A
Phone Jack P.C Board	T2029A501B
Syscon P.C Board	T2030B 502A
Switch P.C Board	T2030B502B
Remocon P.C Board	T2030B502C
Meter/Operate P.C Board	T2030B5030
Motor P.C Board	M3103C726A
Potention P.C Board	M3103C726B
FG P.C Board	M3103C7130
Filter P.C Board	T2029D5040
Detector P.C Board	T2029D5030
Micro SW P.C Board	T2029D5020

2. COMPOSITION OF VARIOUS P.C BOARDS

1) PRE AMP P.C BOARD T2029A501A (2ED) and PHONE JACK P.C BOARD T2029A501B

TR2,4,6,9 to 16,22 to 27,
30,34,37,40------2SC2603(E,F)
TR7,8-----------2SA1115(E,F)
TR17,19 to 21,38-----2SD1012V(G,H)
TR18--------- 2SC1843(P,F)
TR28---------2SB632K(E,F)
TR29--------- 2SC1815(BL,GR)
TR31,32----- 2SC2274K(E)
TR33---------2SC2274K(E,F)
TR36---------2SK117(GR,BL)
TR39---------2SB808V(F,G)

LOCATION OF COMPONENTS

IC

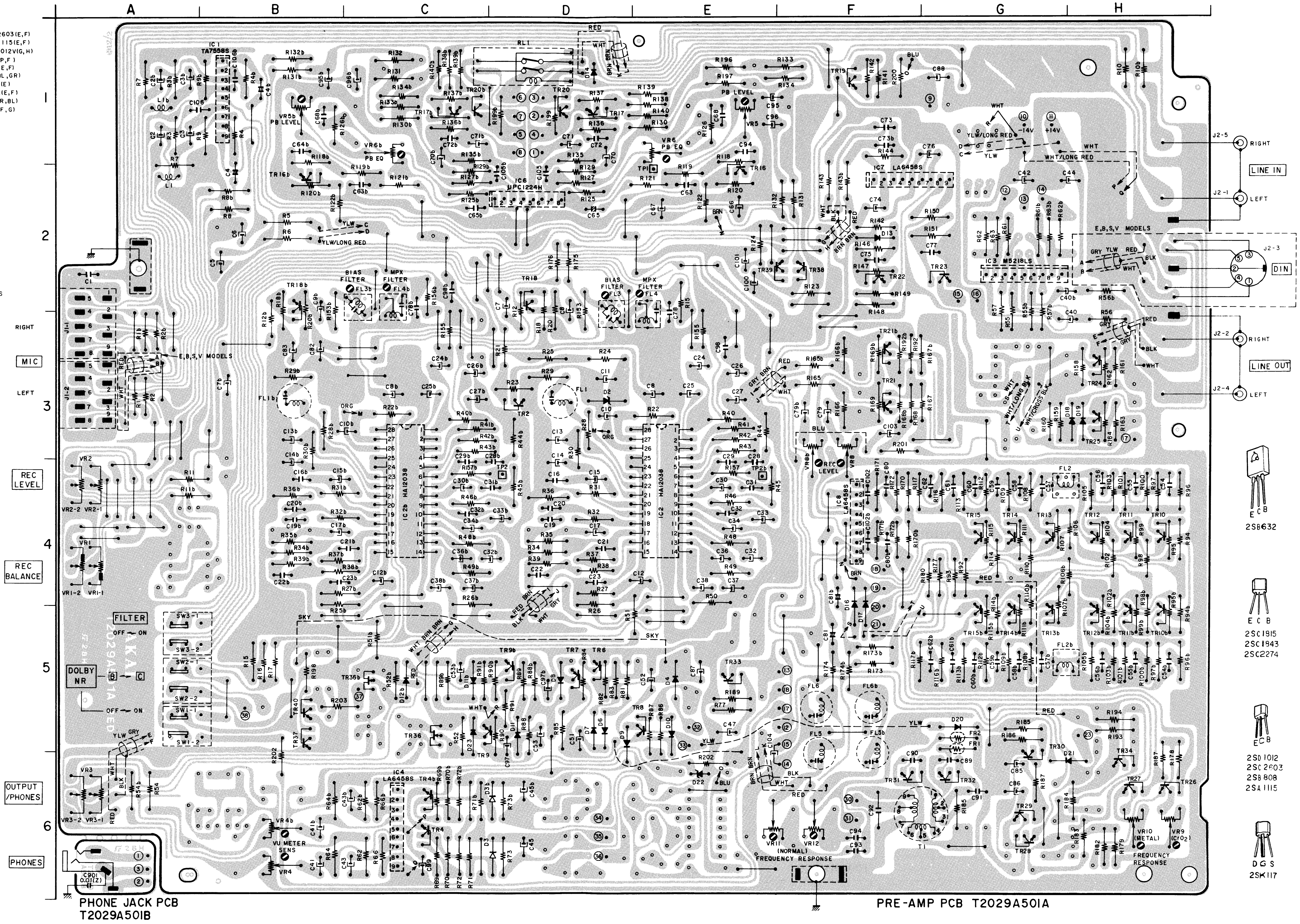
IC1 ------- B1
IC2 ------- D4
IC2b ------ C4
IC3 ------- G2
IC4 ------- C6
IC6 ------- D2
IC7 ------- F2
IC8 ------- F4

TR

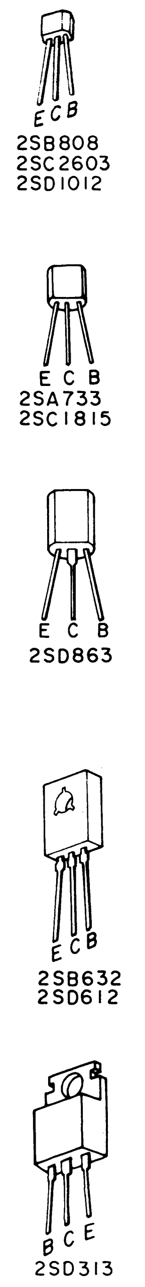
TR2 ------D3
TR4 ------ C6
TR6 to 8 ----D5
TR9 ------C5
TR10 to 12 ---H4
TR10b to 12b -- H5
TR13 to 15 ---G4
TR13b to 15b ---G5
TR16 ------E1
TR16b ------B2
TR17 ------D1
TR17b ------C1
TR18 ------D2
TR18b ------B2
TR19 ------F1
TR20 ------D1
TR20b ------C1
TR21,21b ---F3
TR22 ------F2
TR23 ------G2
TR24,25 ---H3
TR26,27 ---H6
TR28,29 ---G6
TR30,32 ---G5
TR31 ------F5
TR33 ------E5
TR34 ------H6
TR36 ------C5
TR37 ------B5
TR38,39 ---F2
TR40 ------B5

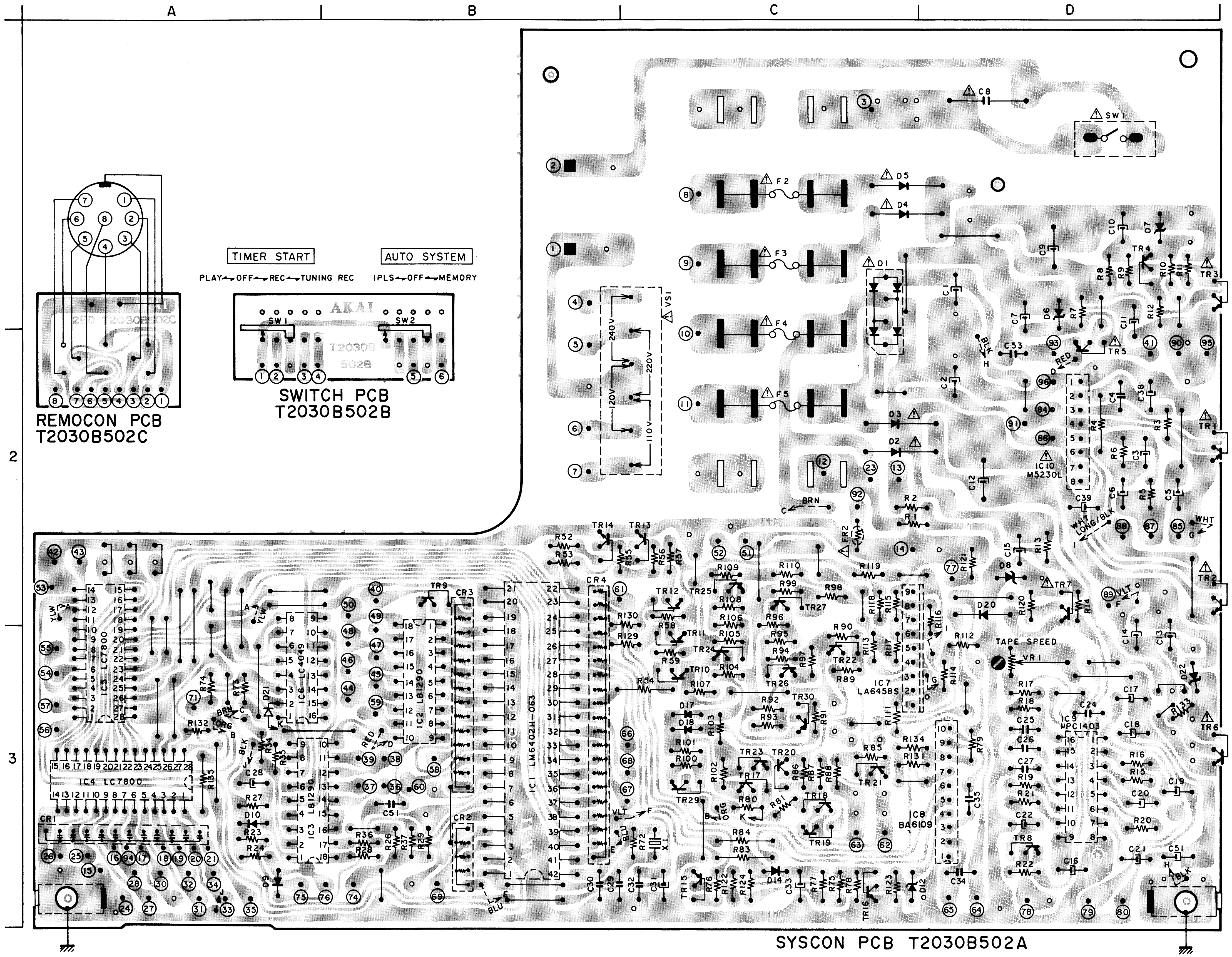
TERMINAL

① to ⑧--D1
⑨ to ⑪--G1
⑫ to ⑭--G1
⑮ ⑯--G2
⑰ ------H3
⑱ to ⑳--F4
㉑ ------F5
㉓ ------H5
㉔ to ㉘--F5
㉙ to ㉛--F6
㉜ ㉝--E5
㉞ to ㊱--D6
㊲ ㊳--B5


A
B
C
D
E
F
G
H
1
2
3
4
5
6
RIGHT
MIC
LEFT
REC LEVEL
REC BALANCE
FILTER
OFF → ON
DOLBY NR
OFF → ON
OUTPUT /PHONES
PHONES
E,B,S,V MODELS
BIAS FILTER
MPX FILTER
PB LEVEL
PB EQ
REC LEVEL
VU METER SENS
FREQUENCY RESPONSE
VR10 (METAL)
VR9 (CrO2)
VR11 (NORMAL)
LINE IN
LINE OUT
DIN
J2-1
J2-2
J2-3
J2-4
J2-5
RIGHT
LEFT
IC1 TA7558S
IC2 HA12038
IC2b HA12038
IC3 M5218LS
IC4 LA6458S
IC6 UPC1224H
IC7 LA6458S
IC8 LA6458S
RL1
AKAI T2029A501A 2ED
PHONE JACK PCB T2029A501B
PRE-AMP PCB T2029A501A
E C B
2SB632
E C B
2SC1915
2SC1943
2SC2274
E C B
2SD1012
2SC2603
2SB808
2SA1115
D G S
2SK117

2) SYSCON P C BOARD T2030B502A (3ED),.SWITCH P.C BOARD T2030B502B and REMOCON P.C BOARD T2030B502C (2ED)


E C B
2SB808
2SC2603
2SD1012
E C B
2SA733
2SC1815
E C B
2SD863
E C B
2SB632
2SD612
B C E
2SD313


A
B
C
D
1
2
3
REMOCON PCB
T2030B502C
2ED T2030B502C
TIMER START
PLAY—OFF—REC—TUNING REC
AUTO SYSTEM
IPLS—OFF—MEMORY
SW1
SW2
AKAI
T2030B
502B
SWITCH PCB
T2030B502B
SW1
C8
F2
F3
F4
F5
D1
D2
D3
D4
D5
VS1
240V
220V
120V
110V
IC10
M5230L
TAPE SPEED
VR1
IC7
LA6458S
IC8
BA6109
IC9
µPC1403
IC1 LM6402H-063
IC2 LB1290
IC3 LB1290
IC4 LC7800
IC5 LC7800
IC6 LC4049
CR1
CR2
CR3
CR4
X1
BRN
RED
WHT
LONG/BLK
YLW
ORG
BLK
BLU
VLT
AKAI
SYSCON PCB T2030B502A

TR1----2SB632K(E,F)
TR2,3---2SD612K(E,F)
TR4,8---2SC1815(BL,GR)
TR5----2SD863(E,F)
TR6----2SD612K(E,F)
TR7----2SD313HP(E,F)
TR9 to 17 24 to 27,29
------ 2SC2603(E,F)
TR18 to 21--2SB808V(G,H)
TR22,23---2SD1012V(G,H)
TR30----2SA733A(P,Q)

IC1----LM6402H-063
IC2,3---LB1290
IC4,5---LC7800
IC6----LC4049
IC7----LA6458S
IC8----BA6109
IC9----µPC1043
IC10----M5230L

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

U MODEL

POWER

LOCATION OF COMPONENTS

TR

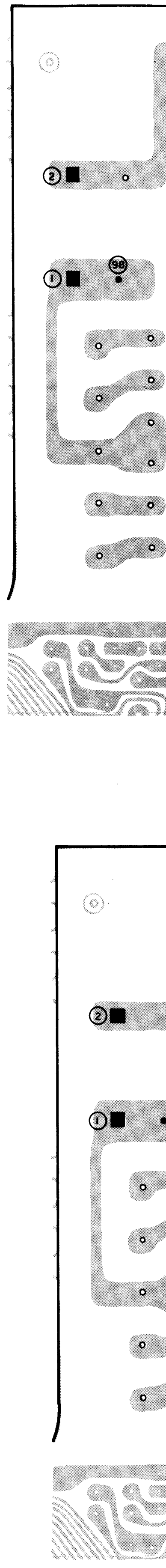
TR1, 2 ------- D2
TR3, 4 ------- D1
TR5 -------- D2
TR6 -------- D3
TR7 ------- D2
TR8 -------- D3
TR9 -------- B2
TR10, 11 ---- C3
TR12, 13 ---- C2
TR14 ------- B2
TR15 to 24 --- C3
TR25 ------- C2
TR26 ------- C3
TR27 ------- C2
TR29, 30 ---- C3

IC

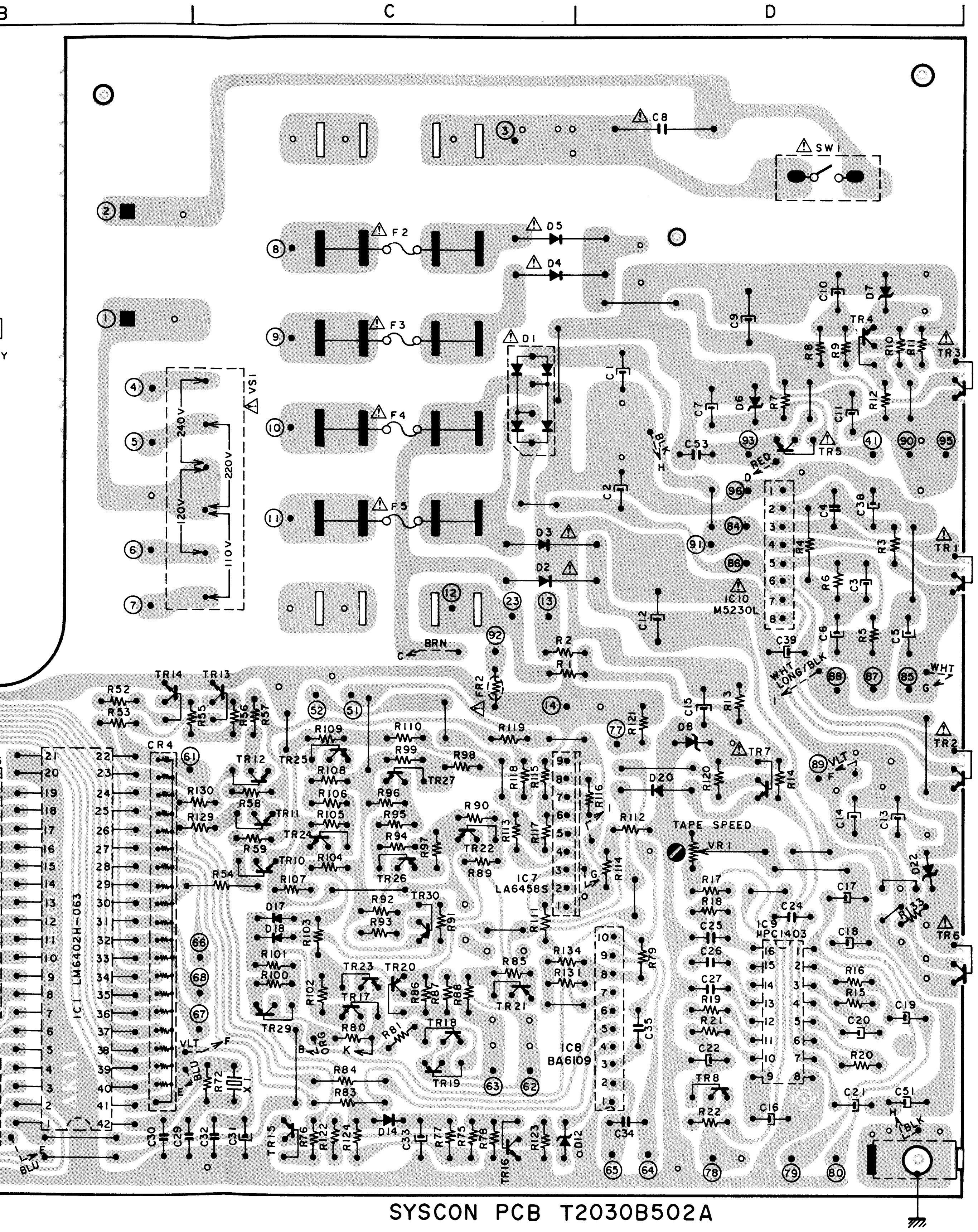
IC1, 2 ------- B3
IC3 to 6 ----- A3
IC7 -------- C3
IC8, 9 ------- D3
IC10 ------- D2

TERMINAL

①, ②-------B1
③ --------C1
④ --------B1
⑤ to ⑦ ------B2
⑧, ⑨-------C1
⑩ to ⑭ ------C2
⑮ to ㉑ ------A3
㉓ --------C2
㉔ to㉘, ㉚ to ㉟ —A3
㊱ to ㊴ ------B3
㊵ --------B2
㊶ --------D2
㊷, ㊸-------A2
㊹ to ㊽ ------B3
㊾, ㊿-------B2
(51), (52)-------C2
(53) --------A2
(54) to (57) ------A3
(58) to (60) ------B3
(61) --------B2
(62), (63)-------C3
(64), (65)-------D3
(66) to (69) ------B3
(71) --------A3
(74) --------B3
(75), (76)-------A3
(77) --------D2
(78) to (80) ------D3
(84) to (91) ------D2
(92) --------C2
(93) --------D2
(94) --------A3
(95) to (97) ------D2



CON P.C BOARD T2030B502C (2ED)


C
D
⚠C8
⚠SW1
⚠F2
⚠F3
⚠F4
⚠F5
⚠D5
⚠D4
⚠D1
⚠D3
⚠D2
⚠VS1
240V
220V
120V
110V
⚠TR3
⚠TR1
⚠TR2
⚠TR6
TR4
TR5
TR7
TR8
TR10
TR11
TR12
TR13
TR14
TR17
TR18
TR19
TR20
TR21
TR22
TR23
TR24
TR25
TR26
TR27
TR29
TR30
⚠IC10
M5230L
IC1 LM6402H-063
IC7 LA6458S
IC8 BA6109
IC9 μPC1403
CR4
TAPE SPEED
VR1
⚠FR2
BRN
BLK
RED
WHT
LONG/BLK
VLT
ORG
BLU
X1
AKAI
SYSCON PCB T2030B502A

U MODEL

POWER

LOCATION OF COMPONENTS

TR

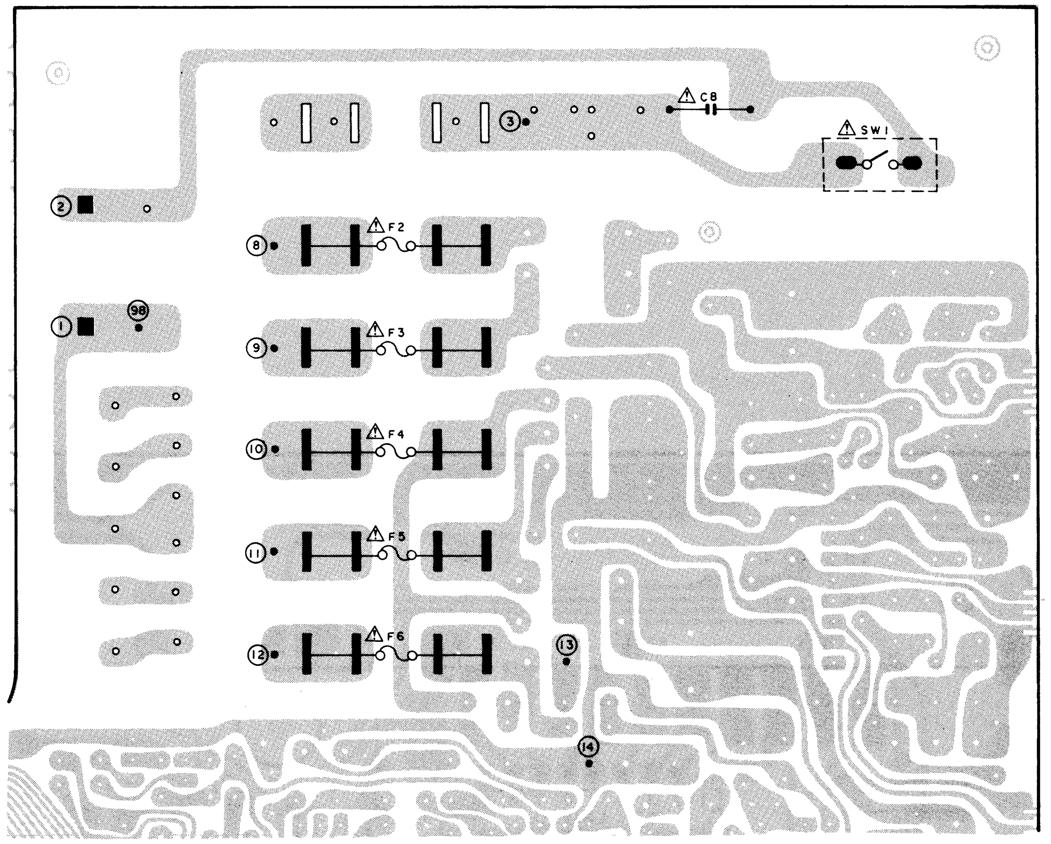
TR1, 2 -------- D2
TR3, 4 -------- D1
TR5 -------- D2
TR6 -------- D3
TR7 -------- D2
TR8 -------- D3
TR9 -------- B2
TR10, 11 ----- C3
TR12, 13 ----- C2
TR14 -------- B2
TR15 to 24 ---- C3
TR25 -------- C2
TR26 -------- C3
TR27 ------- C2
TR29, 30 ----- C3

IC

IC1, 2 ------- B3
IC3 to 6 ------ A3
IC7 -------- C3
IC8, 9 ------- D3
IC10 -------- D2

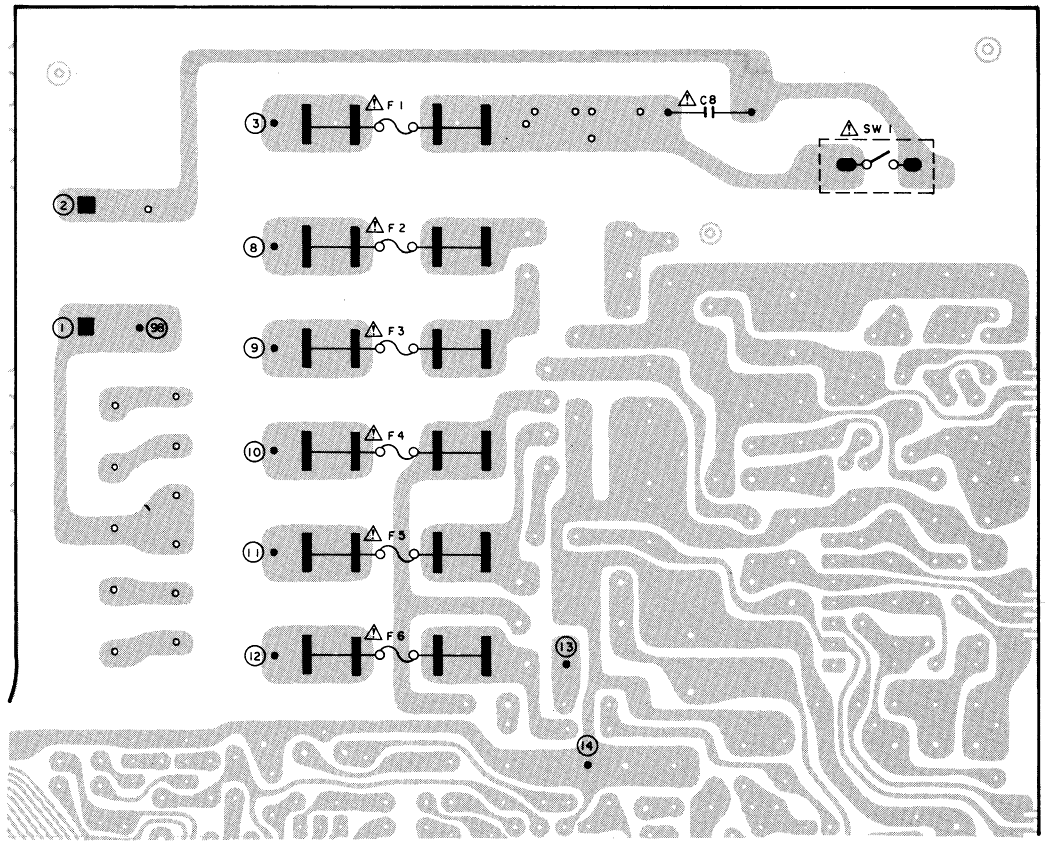
TERMINAL

①, ② -------- B1
③ -------- C1
④ -------- B1
⑤ to ⑦ ------ B2
⑧, ⑨ -------- C1
⑩ to ⑭ ------ C2
⑮ to ㉑ ------ A3
㉓ -------- C2
㉔ to ㉘, ㉚ to ㉟ — A3
㊱ to ㊴ ------ B3
㊵ -------- B2
㊶ -------- D2
㊷, ㊸ -------- A2
㊹ to ㊽ ------ B3
㊾, ㊿ -------- B2
(51), (52) -------- C2
(53) -------- A2
(54) to (57) ------ A3
(58) to (60) ------ B3
(61) -------- B2
(62), (63) -------- C3
(64), (65) -------- D3
(66) to (69) ------ B3
(71) -------- A3
(74) -------- B3
(75), (76) -------- A3
(77) -------- D2
(78) to (80) ------ D3
(84) to (91) ------ D2
(92) -------- C2
(93) -------- D2
(94) -------- A3
(95) to (97) ------ D2


⚠C8
⚠SW1
⚠F2
⚠F3
⚠F4
⚠F5
⚠F6

J,C,A,E,V,S MODEL

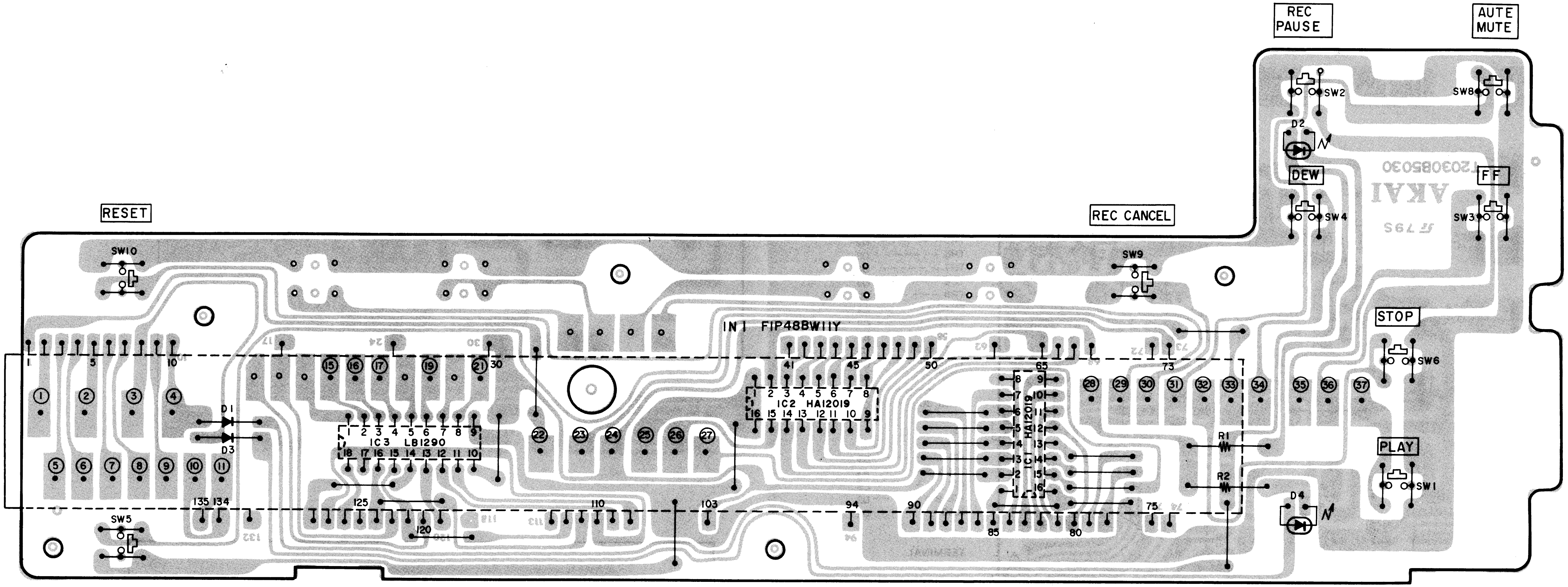
POWER


⚠F1
⚠C8
⚠SW1
⚠F2
⚠F3
⚠F4
⚠F5
⚠F6

B MODEL

POWER

3) METER/OPERATE P.C BOARD T2030B5030

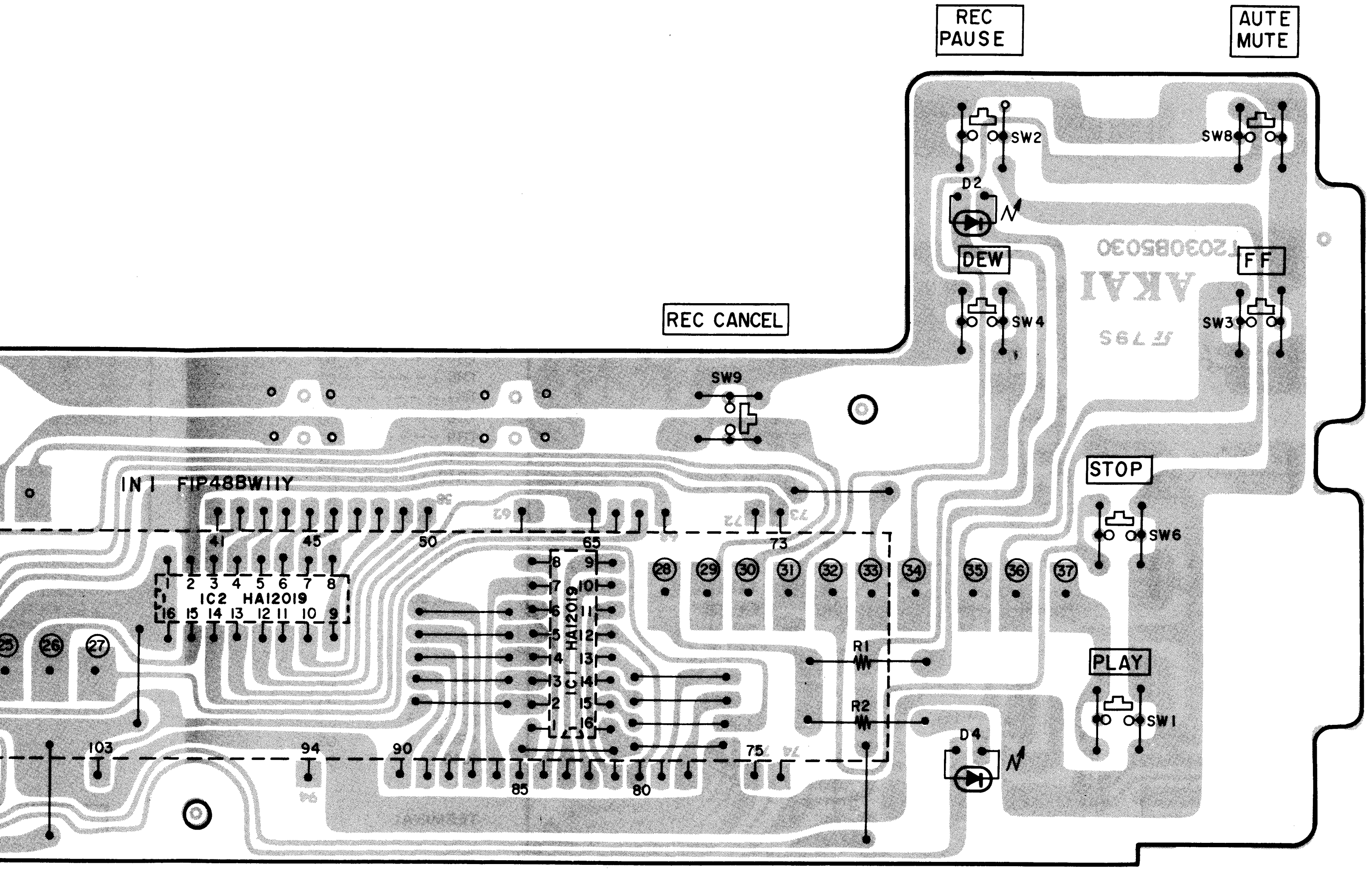

REC PAUSE
AUTE MUTE
SW2
SW8
D2
DEW
FF
SW4
SW3
T2030B5030
AKAI
RESET
REC CANCEL
SW10
SW9
STOP
SW6
IN1 FIP48BW11Y
IC2 HA12019
IC3 LB1290
IC1 HA12019
D1
D3
R1
R2
PLAY
SW1
D4
SW5
EJECT

METER/OPERATE PCB T2030B5030

4) MOTOR P.C

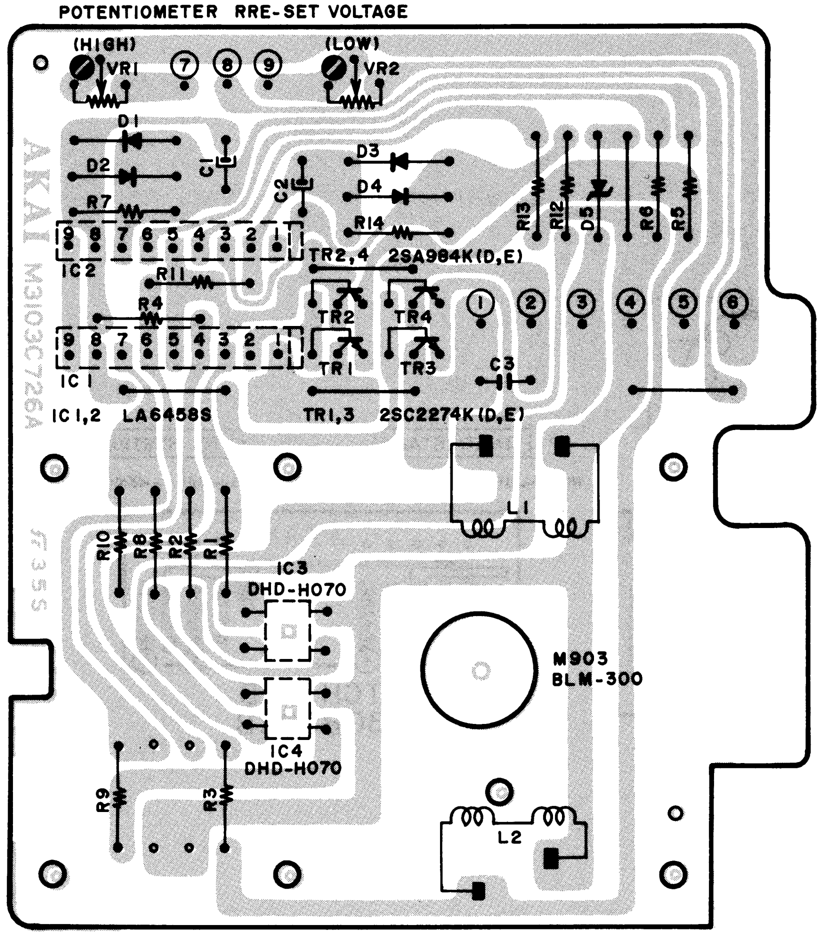
POT
AKAI
M3103C726A
IC2
IC1
IC1,2
MO

5) FG P.C BOAR

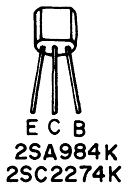

REC PAUSE
AUTE MUTE
SW2
SW8
D2
DEW
FF
SW4
SW3
REC CANCEL
SW9
IN1 FIP48BW11Y
STOP
SW6
IC2 HA12019
IC1 HA12019
R1
R2
PLAY
SW1
D4
AKAI
T2030B5030
41
45
50
65
73
75
80
85
90
94
103
25
26
27
28
29
30
31
32
33
34
35
36
37

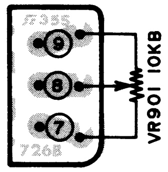
METER/OPERATE PCB T2030B5030

4) MOTOR P.C BOARD M3103C726A and POTENTION P.C BOARD M3103C726B


POTENTIOMETER RRE-SET VOLTAGE
(HIGH)
VR1
(LOW)
VR2
7
8
9
D1
D2
C1
C2
D3
D4
R7
R14
R13
R12
D5
R6
R5
IC2
TR2,4 2SA984K(D,E)
R11
R4
TR2
TR4
1
2
3
4
5
6
IC1
TR1
TR3
C3
IC1,2 LA6458S
TR1,3 2SC2274K(D,E)
AKAI M3103C726A
L1
R10
R8
R2
R1
IC3 DHD-H070
IC4 DHD-H070
M903 BLM-300
R9
R3
L2

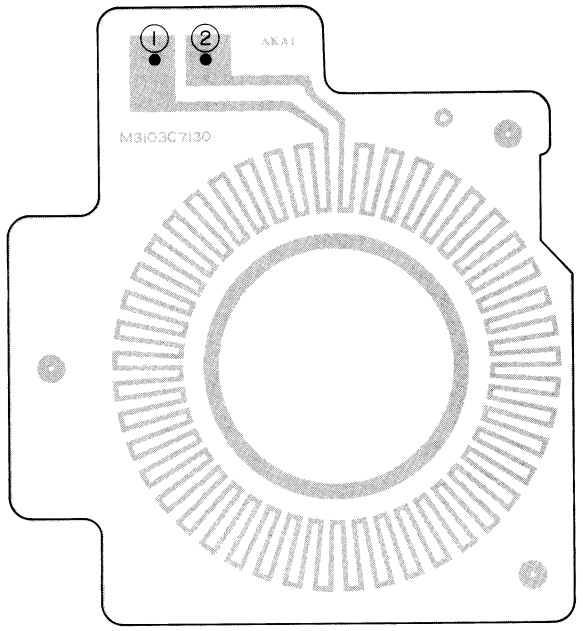
MOTOR PCB M3103C726A


E C B
2SA984K
2SC2274K

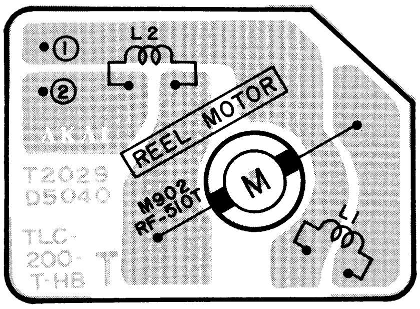

9
8
7
VR901 10KB
7268

POTENTION PCB
M3103C726B

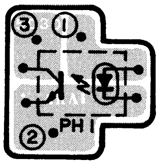
5) FG P.C BOARD M3103C7130


1
2
AKAI
M3103C7130

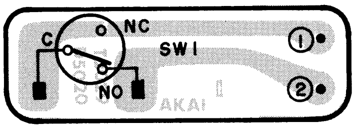
6) FILTER P.C BOARD T2029D5040


①
②
L2
AKAI
T2029
D5040
TLC-
200-
T-HB
T
REEL MOTOR
M902
RF-510T
M
L1

7) DETECTOR P.C BOARD T2029D5030



8) MICRO SW P.C BOARD T2029D5020


C
NC
SW1
NO
①
②
AKAI

SECTION 3

SERVICE MANUAL

MODEL GX-F51

TABLE OF CONTENTS

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    2. COMPOSITION OF VARIOUS P.C BOARDS 3-10

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

TRACK SYSTEM	4 Track 2 Channel Stereo System
TAPE	Philips Type Cassette
TAPE SPEED	4.76 cm/s ± 1.0% (1-7/8 ips. ±1.0%)
HEADS	Twin Field Super GX head for recording/playback x 1 Erase head x 1
MOTORS	FG servo D.C. motor for direct capstan drive x 1 D.C. motor for reel drive x 1
WOW & FLUTTER	0.10% WTD (DIN) 0.035% WRMS
TAPE WINDING TIME	90 sec. using a C-60 cassette tape
FREQUENCY RESPONSE	Normal: 20 to 17,000 Hz ± 3 dB (−20 VU) CrO_2: 20 to 18,000 Hz ± 3 dB (−20 VU) Metal: 20 to 19,000 Hz ± 3 dB (−20 VU)
FREQUENCY RANGE	Normal: 15 to 18,000 Hz CrO_2: 15 to 20,000 Hz Metal: 15 to 21,000 Hz
SIGNAL TO NOISE RATIO	Metal: Better than 60 dB (measured via tape with peak recording level) Dolby B-type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz Dolby C-type NR switch ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz
HARMONIC DISTORTION	1 kHz, 3rd harmonic distortion Metal: Less than 0.8%
INPUT	MIC: 0.25 mV (input impedance 5.0 kohms) Required microphone impedance: 600 ohms Line: 70 mV (input impedance: 47 kohms)
OUTPUT	Line: 410 mV at 0 VU Required load impedance: 2.0 kohms Phone: 1.3 mW/8 ohms at 0 VU
DIN	Input: 2.0 mV Output: 410 mV Required impedance: more than 20 kohms
POWER REQUIREMENTS	100V, 50/60 Hz for Japan 120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK and Australia 110V/120V/220V/240V, 50/60 Hz switchable for other countries.
POWER CONSUMPTION	U, C, A Model: 24W J Model: 22W
DIMENSIONS	440(W) x 100(H) x 345(D) mm (17.3 x 3.9 x 13.6")
WEIGHT	6.1 kg (13.4 lbs)

* For improvement purposes, specifications and design are subject to change without notice.
* "Dolby" and the Double D symbol are trademarks of Dolby Laboratories.
(Manufactured under license from Dolby Laboratories).

II. CONTROLS

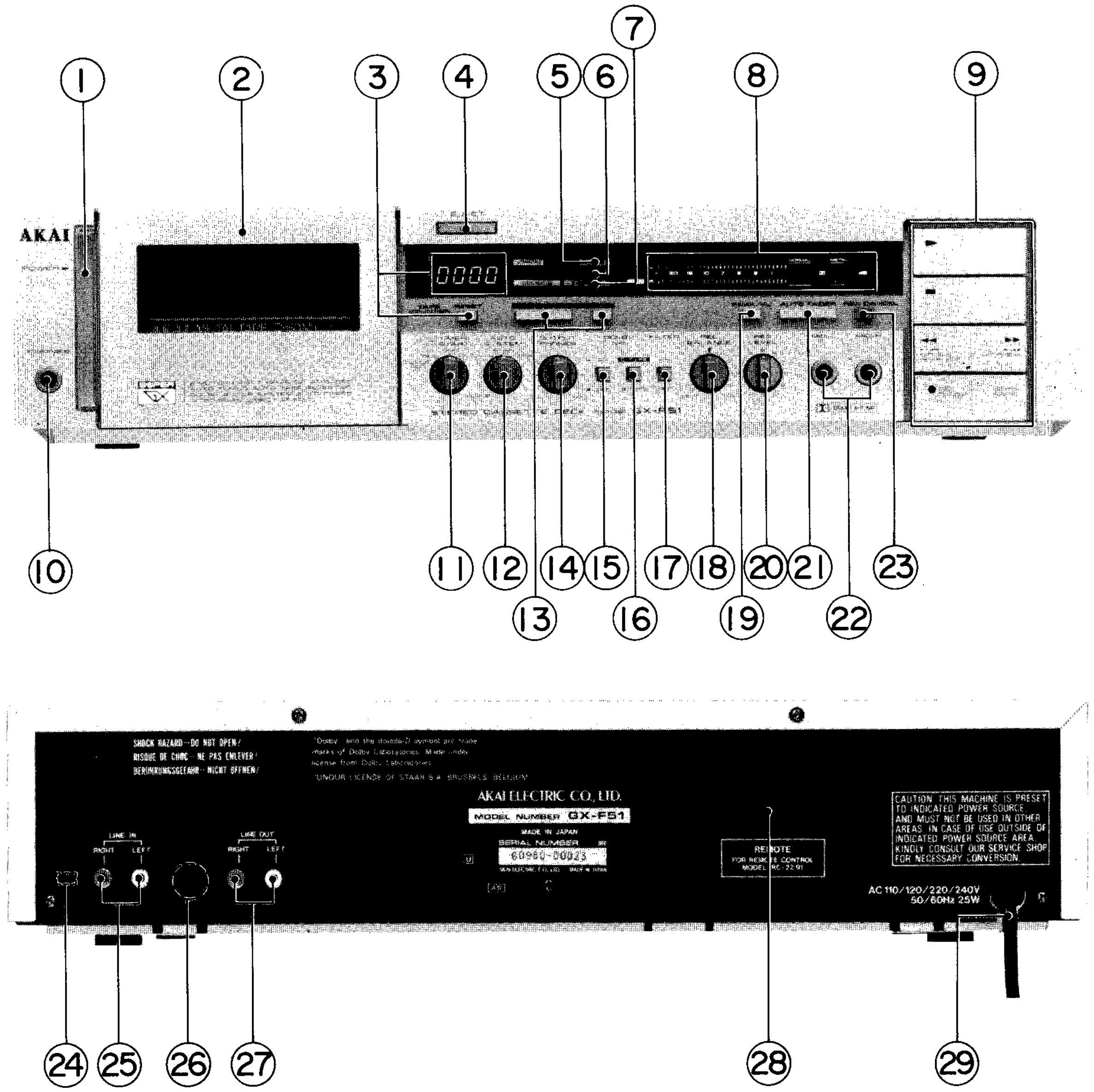

7
1
2
3
4
5
6
8
9
AKAI
10
11
12
13
14
15
16
17
18
19
20
21
22
23
SHOCK HAZARD – DO NOT OPEN!
RISQUE DE CHOC – NE PAS ENLEVER!
BERÜHRUNGSGEFAHR – NICHT ÖFFNEN!
AKAI ELECTRIC CO., LTD.
MODEL NUMBER GX-F51
MADE IN JAPAN
SERIAL NUMBER
LINE IN
RIGHT
LEFT
LINE OUT
RIGHT
LEFT
REMOTE
CAUTION THIS MACHINE IS PRESET TO INDICATED POWER SOURCE AND MUST NOT BE USED IN OTHER AREAS. IN CASE OF USE OUTSIDE OF INDICATED POWER SOURCE AREA, KINDLY CONSULT OUR SERVICE SHOP FOR NECESSARY CONVERSION.
AC 110/120/220/240V
50/60Hz 25W
24
25
26
27
28
29

Fig. 1 Controls

1. POWER SWITCH
2. CASSETTE RECEPTACLE
3. FLD TAPE COUNTER and RESET BUTTON
4. EJECT BUTTON
5. TAPE POSITION INDICATORS
6. AUTO TAPE TUNING INDICATORS
7. DOLBY B and DOLBY C INDICATORS
8. FLD BAR METER with MAXIMUM INPUT LEVEL INDICATORS
9. OPERATING BUTTONS
   PLAY (▶) BUTTON with INDICATOR
   STOP (■) BUTTON
   REWIND (◀◀) BUTTON
   FAST FORWARD (▶▶) BUTTON
   RECORDING (REC)/PAUSE BUTTON with INDICATOR
   AUTO MUTE BUTTON
10. HEADPHONE (PHONES) JACK
11. TIMER START SELECTOR
12. AUTO SYSTEM SELECTOR
13. TUNING and REFERENCE (REF) BUTTONS
14. OUTPUT/HEADPHONE (PHONES) CONTROL
15. DOLBY NR SWITCH
16. DOLBY NR SELECTOR
17. MPX FILTER SWITCH
18. RECORDING (REC) BALANCE CONTROL (LEFT and RIGHT)
19. PEAK/VU SELECTOR
20. RECORDING (REC) LEVEL CONTROL
21. AUTO FADER BUTTON
22. MICROPHONE JACKS (MIC-L: left, MIC-R: right)
23. RECORDING (REC) CANCEL BUTTON
24. LINE/DIN SELECTOR
    (Some models do not have this facility.)
25. LINE IN JACKS
26. DIN JACK
    (Some models are not equipped with this facility.)
27. LINE OUT JACKS
28. REMOTE JACK
29. POWER CORD

III. PRINCIPAL PARTS LOCATION

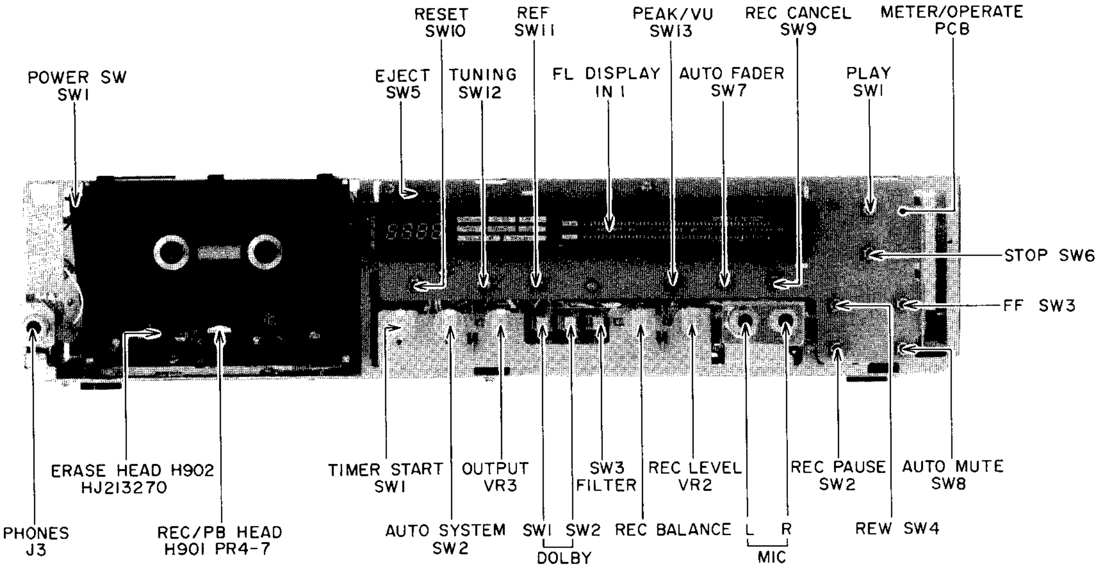

RESET SW10
REF SW11
PEAK/VU SW13
REC CANCEL SW9
METER/OPERATE PCB
POWER SW SW1
EJECT SW5
TUNING SW12
FL DISPLAY IN1
AUTO FADER SW7
PLAY SW1
STOP SW6
FF SW3
ERASE HEAD H902 HJ213270
TIMER START SW1
OUTPUT VR3
SW3 FILTER
REC LEVEL VR2
REC PAUSE SW2
AUTO MUTE SW8
PHONES J3
REC/PB HEAD H901 PR4-7
AUTO SYSTEM SW2
SW1 SW2 DOLBY
REC BALANCE
L R MIC
REW SW4

Fig. 2 Front View

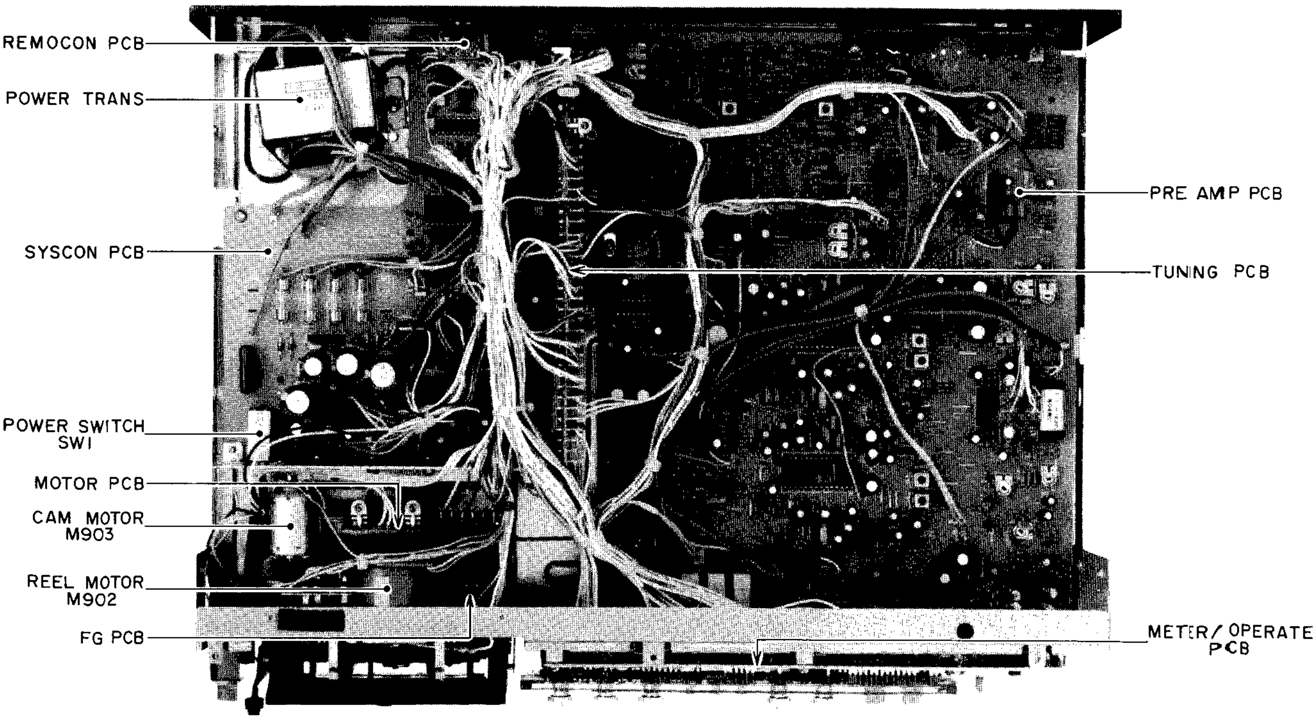

REMOCON PCB
POWER TRANS
SYSCON PCB
POWER SWITCH SW1
MOTOR PCB
CAM MOTOR M903
REEL MOTOR M902
FG PCB
PRE AMP PCB
TUNING PCB
METER/ OPERATE PCB

Fig. 3 Top View

IV. VOLTAGE CONVERSION

Refer to Section 2-IV (GX-F31)

V. MECHANICAL ADJUSTMENT

Refer to Section 2-V (GX-F31)

VI. HEAD ADJUSTMENT

Refer to Section 2-VI (GX-F31)

VII. AMPLIFIER ADJUSTMENT

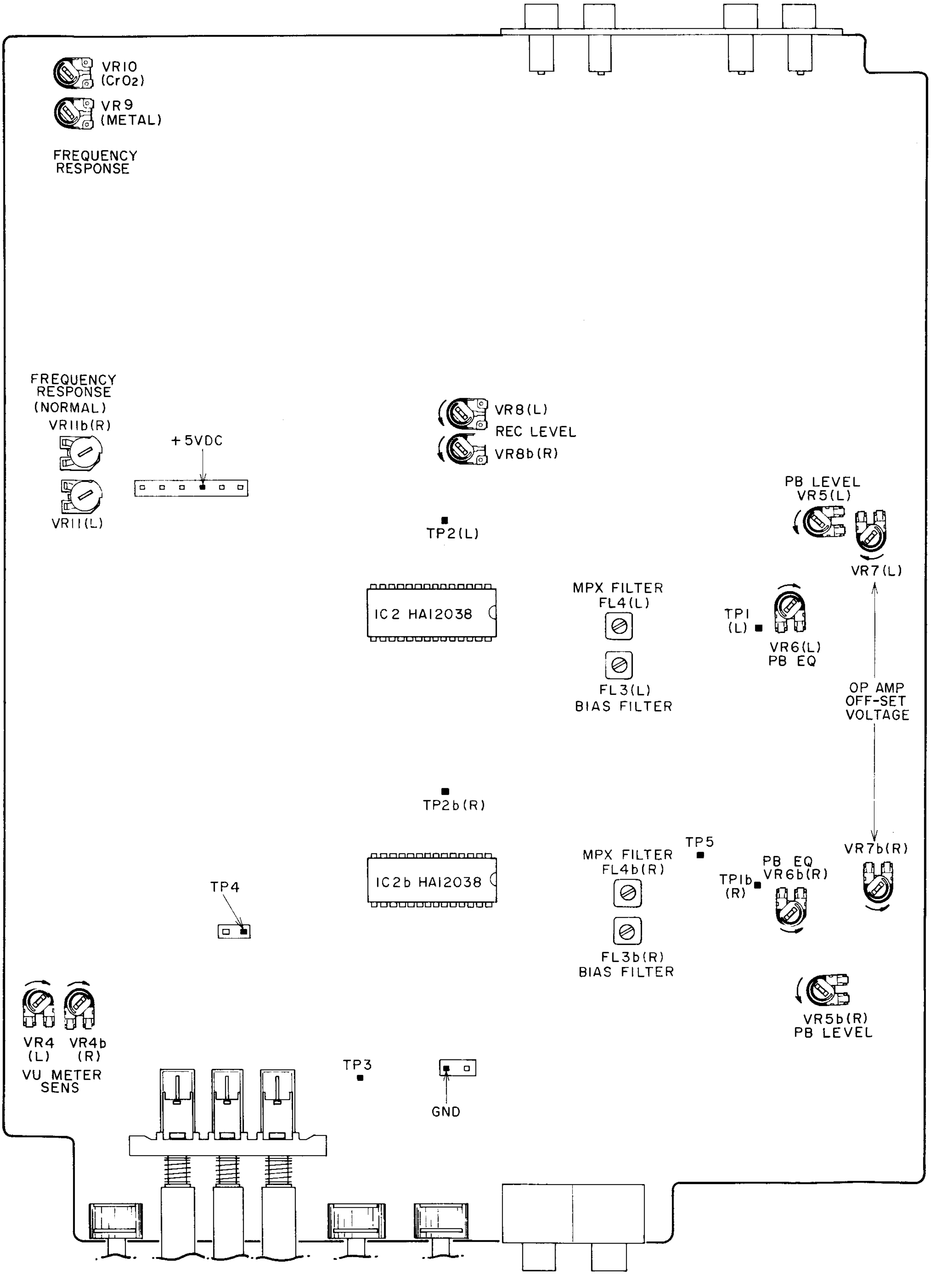

VR10 (CrO2)
VR9 (METAL)
FREQUENCY RESPONSE
FREQUENCY RESPONSE (NORMAL)
VR11b(R)
VR11(L)
+5VDC
VR8(L)
REC LEVEL
VR8b(R)
TP2(L)
PB LEVEL
VR5(L)
VR7(L)
IC2 HA12038
MPX FILTER
FL4(L)
TP1 (L)
VR6(L)
PB EQ
FL3(L)
BIAS FILTER
OP AMP OFF-SET VOLTAGE
TP2b(R)
TP5
MPX FILTER
FL4b(R)
PB EQ
VR6b(R)
VR7b(R)
TP4
IC2b HA12038
TP1b (R)
FL3b(R)
BIAS FILTER
VR5b(R)
PB LEVEL
VR4 (L)
VR4b (R)
VU METER SENS
TP3
GND

Fig. 4 Pre Amp P.C Board

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Parts	Result	Remarks
1	OP Amp Off-Set Voltage		STOP	VR7 Pre Amp PCB	TP1 0 ± 0.1 VDC	
2	PB Level	333 Hz Test Tape (TF-101CL)	PB	VR5 Pre Amp PCB	−5.5 ± 0.5 dBm (410 mV)	
3	PB EQ	10 kHz Test Tape (TF-106CH)	PB	VR6 Pre Amp PCB	−22.5 ± 1.5 dBm	
4	Normal Position Frequency Response	Normal Blank Tape 1 kHz, 10 kHz −25.5 dBm	REC/PB	VR11 Pre Amp PCB	1 kHz to 10 kHz flat response	
5	CrO_2 Position Frequency Response	CrO_2 Blank Tape 1 kHz, 10 kHz −25.5 dBm	REC/PB	VR10 Pre Amp PCB	1 kHz to 10 kHz flat response	
6	Metal Position Frequency Response	Metal Blank Tape 1 kHz, 10 kHz −25.5 dBm	REC/PB	VR9 Pre Amp PCB	1 kHz to 10 kHz flat response	
7	REC Level	Normal Blank Tape 1 kHz, −5.5 dBm	REC/PB	VR8 Pre Amp PCB	−5.5 ± 0.3 dBm (410 mV)	
8	MPX Filter	19 kHz from oscillator	REC	FL4 Pre Amp PCB	Minimum Output	MPX Filter ON
9	Bias Filter	No Signal Input	REC	FL3 Pre Amp PCB	Minimum Output	Set REC Volume to maximum
10	VU Meter Sensitivity	1 kHz, −5.5 dBm from oscillator	REC	VR4 Pre Amp PCB	0 dB (VU) indication	

NOTES:
1. Output volume should be at maximum.
2. Dolby NR Switch to OFF Position.
3. Except for Step 8 set Dolby Filter Switch to OFF Position.
4. Use the following cassette measuring tapes:

Normal Tape	: Maxell	UD	C-60
CrO_2 Tape	: TDK	SA	C-60
Metal Tape	: TDK	MA-C	C-60

For your reference:

Confirmation of Dolby level

1) Set to REC/PAUSE.
2) Input a signal of 400 Hz and adjust the input level so that the level of pin ㉔ of Dolby I.C (HA-12038) will be 580 mV when Dolby NR is OFF.
3) Check that the level of TP-2 is 580 mV.

VIII. TUNING CIRCUIT ADJUSTMENT

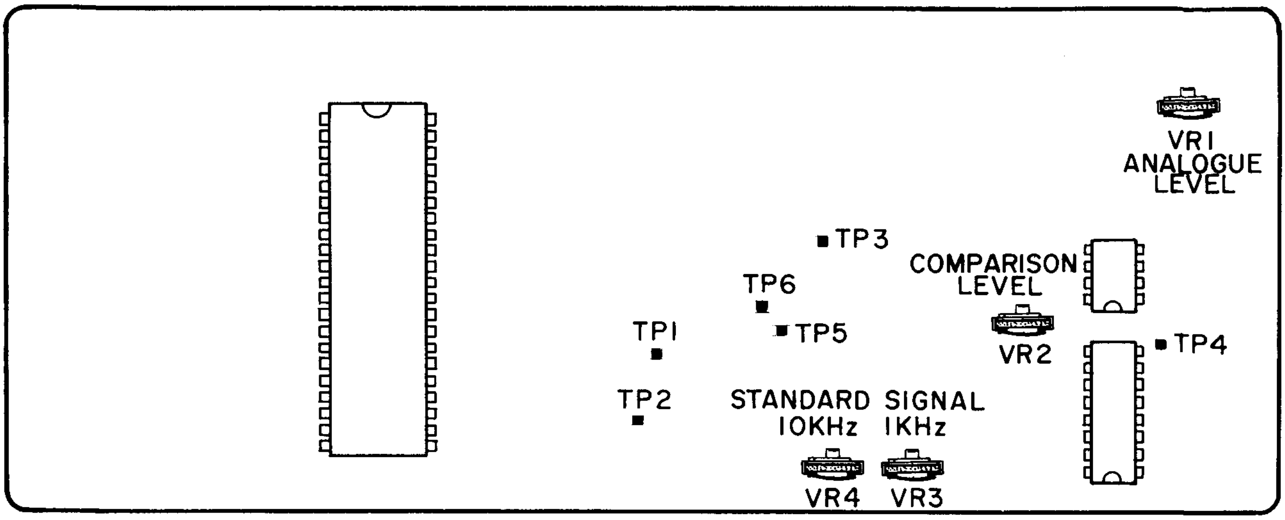


Fig. 5 Tuning P.C Board

1) Standard Signal (1 kHz) output Adjustment
   a. Set to REC/PAUSE.
   b. Apply +5V DC to TP3 of the Pre Amp PCB.
   c. Input square wave of 3Vp-p or more, 1057 ± 10 Hz, into TP-1 of the tuning PCB.
   d. Adjust VR3 of the tuning PCB so that the level of TP4 of Pre Amp PCB will be −25.5 ± 0.1 dBm.
2) Standard Signal (10 kHz) Output Adjustment
   a. Set to REC/PAUSE.
   b. Apply +5V DC to TP3 of Pre Amp PCB.
   c. Input square wave of 3Vp-p or more, 9941 ± 100 Hz, into TP2 of the tuning PCB.
   d. Adjust VR4 of the tuning PCB so that the level of TP4 of Pre Amp PCB will be −24.0 ± 0.1 dBm.
3) A/D Converter Analogue Level Adjustment
   a. Set to PLAY mode without inserting a tape.
   b. Input a signal of 1 kHz into TP5 of Pre Amp PCB and adjust the input level so that TP4 of Pre Amp PCB will be −25.5 dBm.
   c. Adjust VR1 of the tuning PCB so that the level of TP3 of the tuning PCB will be 3.49 ±0.05V DC.
4) A/D Converter Comparison Level Adjustment
   a. Connect TP5 and TP6 of the tuning PCB to GND.
   b. Adjust VR2 of the tuning PCB so that the level of TP4 of the tuning PCB will be 3.70 ± 0.05V DC.

NOTE: A digital voltmeter should be used for the measurement of DC voltage and an AC voltmeter (mV meter) for the measurement of AC voltage, and the input impedance should be 10M ohm or more.

IX. DC RESISTANCE OF HEADS

Description	Name	DC Resistance
REC/PB Head	PR4-7	650 ohms ± 10%
Erase Head	HJ213270	3.5 ohms

X. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Pre Amp P.C Board	T2030A501A
Phone Jack P.C Board	T2030A501B
Tuning P.C Board	T2030C5040
Syscon P.C Board	T2030B502A
Switch P.C Board	T2030B502B
Remocon P.C Board	T2030B502C
Meter/Operate P.C Board	T2030B5030
Motor P.C Board	T3103C726A
Potention P.C Board	M3103C726B
FG P.C Board	M3103C7130
Filter P.C Board	T2029D5040
Detector P.C Board	T2029D5030
Micro SW P.C Board	T2029D5020

2. COMPOSITION OF VARIOUS P.C BOARDS

1) PRE AMP P.C BOARD T2030A501A (2ED) and PHONE JACK P.C BOARD T2030A501B

LOCATION OF COMPONENTS

IC

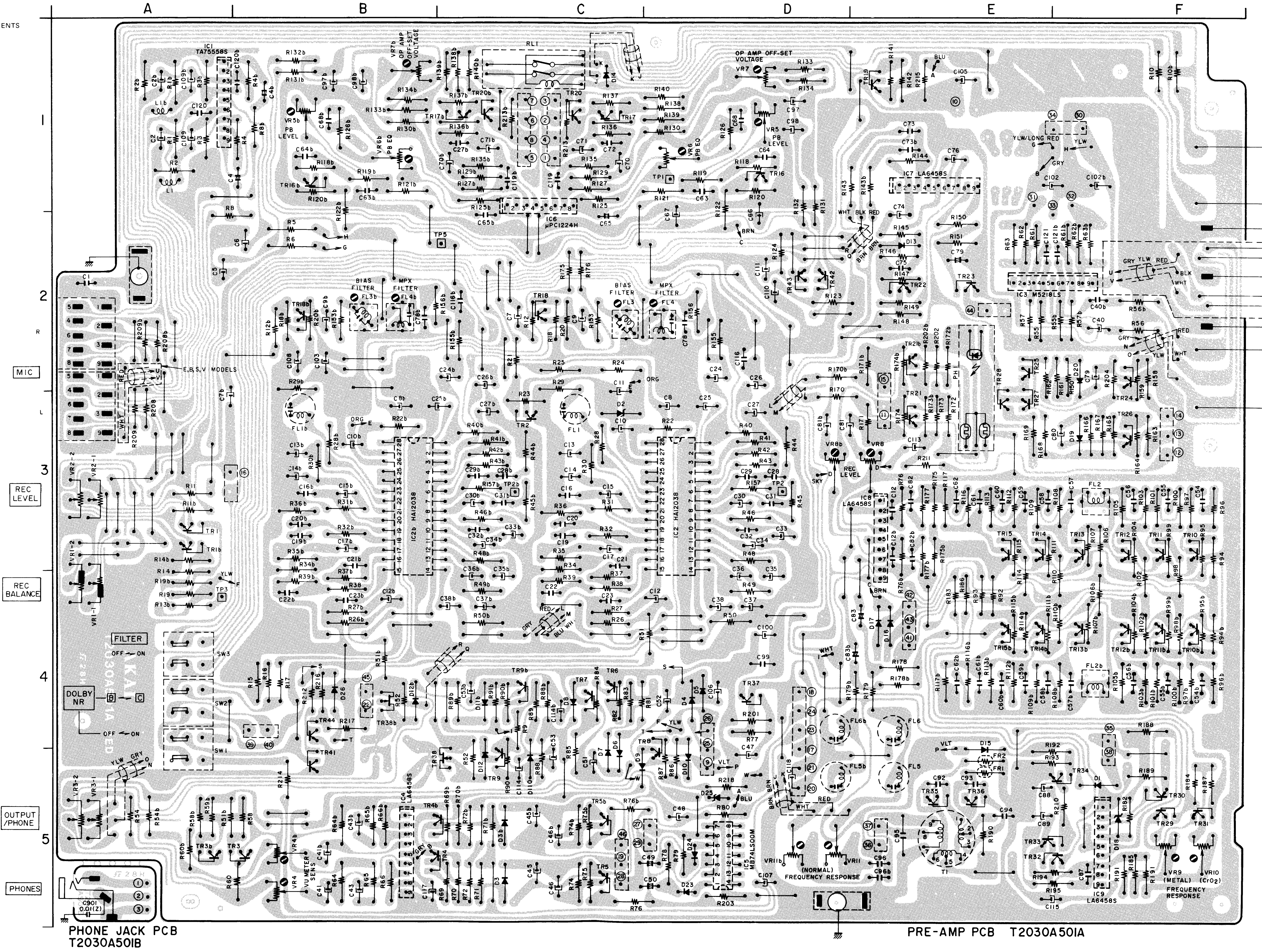
IC1	A1
IC2	D3
IC2b	B3
IC3	F2
IC4	B5
IC5	D5
IC6	C1
IC7	E1
IC8	E3
IC9	F5

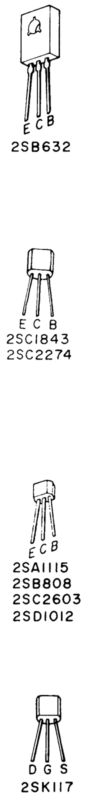
TR

TR1, 1b	A3
TR2	C3
TR3, 3b	A5
TR4, 4b	B5
TR5, 5b	C5
TR6, 7	C4
TR8	D4
TR9	C5
TR9b	C4
TR10 to 13	F3
TR10b to 13b	F4
TR14, 15	E3
TR14b, 15b	E4
TR16	D1
TR16b	B1
TR17, 17b	C1
TR18	C2
TR18b	B2
TR19	E1
TR20, 20b	C1
TR21, 21b	E2
TR22, 23	E2
TR24	F2
TR25	E2
TR26	F3
TR27, 28	E2
TR29 to 31	F5
TR32 to 34	E5
TR35, 36	E5
TR37	D4
TR38	C4
TR38b	B4
TR41	B4
TR42, 43	D2
TR44	B4

TERMINAL

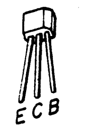
① to ⑧	C1
⑨	D4
⑩	E1
⑪	E3
⑫ to ⑭	F3
⑮	E2
⑯	A3
⑰, ⑱	D4
⑲	C5
⑳	D5
㉑	D4
㉒	B4
㉓ to ㉖	D4
㉗	D5
㉘	C5
㉙	D5
㉚	F1
㉛	E1
㉜	F1
㉝, ㉞	E1
㉟	F5
㊱, ㊲	E5
㊳	F5
㊴, ㊵	B4
㊶ to ㊸	E4
㊹	E2
㊺	B4
㊻	C5


A
B
C
D
E
F
1
2
3
4
5
MIC
REC LEVEL
REC BALANCE
FILTER
OFF — ON
DOLBY NR
OUTPUT /PHONE
PHONES
LINE IN
R
L
DIN
LINE OUT
IC1 TA7555BS
IC6 μPC1224H
IC7 LA6458S
IC3 M5218L5
IC2 HA12038
IC2b HA12038
IC8 LA6458S
IC4 LA6458S
IC5 MB74LS00M
IC9 LA6458S
RL1
BIAS FILTER
MPX FILTER
OP AMP OFF-SET VOLTAGE
PB LEVEL
PB EQ
REC LEVEL
VU METER SENS
(NORMAL) FREQUENCY RESPONSE
VR9 (METAL)
VR10 (CrO2)
FREQUENCY RESPONSE
E,B,S,V MODELS
SW1
SW2
SW3
C901 0.01(Z)
PHONE JACK PCB T2030A501B
PRE-AMP PCB T2030A501A

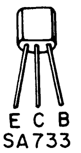

E C B
2SB632
E C B
2SC1843
2SC2274
E C B
2SA1115
2SB808
2SC2603
2SD1012
D G S
2SK117

TR1, 17, 19 to 21, 42 — — — 2SD1012V(G, H)
TR2 to 6, 9 to 16, 22 to 29, 31, 34, 41, 44 — — 2SC2603(E, F)
TR7, 8, 30 — — 2SA1115(E, F)
TR18 — — — — 2SC1843(E, F)
TR32 — — — — 2SB632K(E, F)
TR33 — — — — 2SC1843(P, F)
TR35 to 37 — — 2SC2274K(E)
TR38 — — — — 2SK117(GR, BL)
T43 — — — — — 2SB808V(F, G)

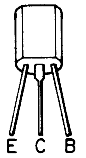
2) SYSCON P.C BOARD T2030B502A (3ED), SWITCH P.C BOARD T2030B502B and REMOCON P.C BOARD T2030B502C (2ED)



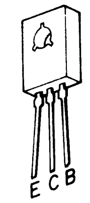
2SB808
2SC2603
2SD1012



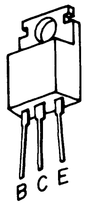
2SA733
2SC1815



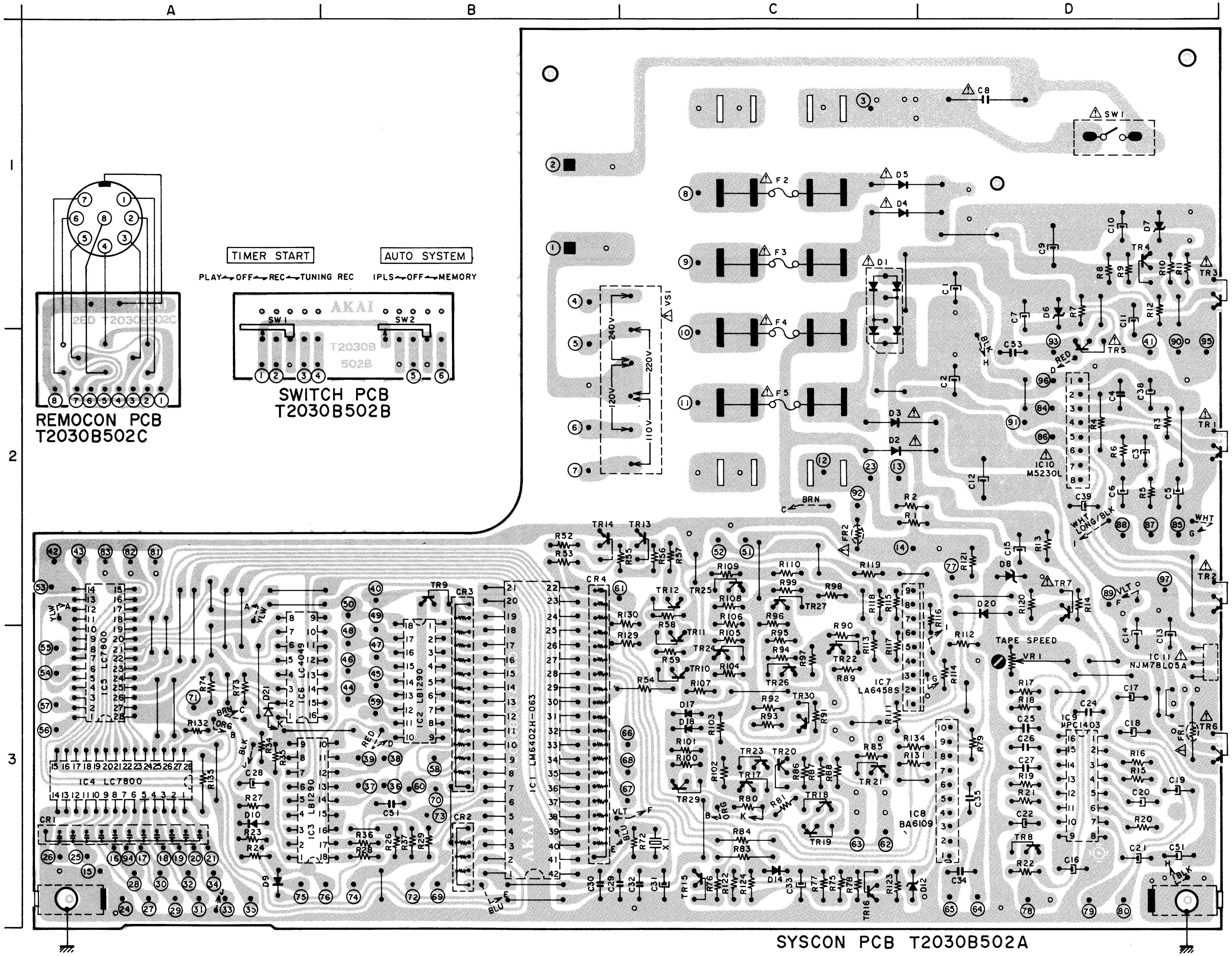
2SD863



2SB632
2SD612



2SD313


A
B
C
D
1
2
3
TIMER START
PLAY OFF REC TUNING REC
AUTO SYSTEM
IPLS OFF MEMORY
AKAI
SW1
SW2
T2030B 502B
2ED T2030B502C
⚠SW1
⚠C8
⚠F2
⚠F3
⚠F4
⚠F5
⚠D5
⚠D4
⚠D1
⚠D3
⚠D2
⚠VS1
240V
220V
120V
110V
⚠TR3
⚠TR1
⚠TR2
⚠TR5
⚠TR6
⚠TR7
⚠IC10 M5230L
⚠IC11 NJM78L05A
⚠FR1
⚠FR2
TAPE SPEED
VR1
IC1 LM6402H-063
IC2 LB1290
IC3 LB1290
IC4 LC7800
IC5 LC7800
IC6 LC4049
IC7 LA6458S
IC8 BA6109
IC9 µPC1403
CR1
CR2
CR3
CR4
BRN
ORG
BLK
BLU
RED
YLW
WHT
LONG/BLK
VLT
X1

REMOCON PCB T2030B502C

SWITCH PCB T2030B502B

SYSCON PCB T2030B502A

TR1----2SB632K(E,F)
TR2,3---2SD612K(E,F)
TR4,8---2SC1815(BL,GR)
TR5---- 2SD863(E,F)
TR6---- 2SB632K(E,F
TR7----2SD313HP(E,F)
TR9 to 17 24 to 27,29
----- 2SC2603(E,F)
TR18 to 21--2SB808V(G,H)
TR22,23---2SD1012V(G,H)
TR30----2SA733A(P,Q)

IC1----LM6402H-063
IC2,3---LB1290
IC4,5---LC7800
IC6----LC4049
IC7----LA6458S
IC8----BA6109
IC9----µPC1043
IC10----M5230L
IC11----NJM78L05A

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

U MODEL

POWER

LOCATION OF COMPONENTS

TR

TR1, 2 -------- D2
TR3, 4 -------- D1
TR5 --------- D2
TR6 --------- D3
TR7 -------- D2
TR8 --------- D3
TR9 --------- B2
TR10, 11 ------ C3
TR12, 13 ----- C2
TR14 -------- B2
TR15 to 24 ---- C3
TR25 -------- C2
TR26 -------- C3
TR27 ------- C2
TR29, 30 ----- C3

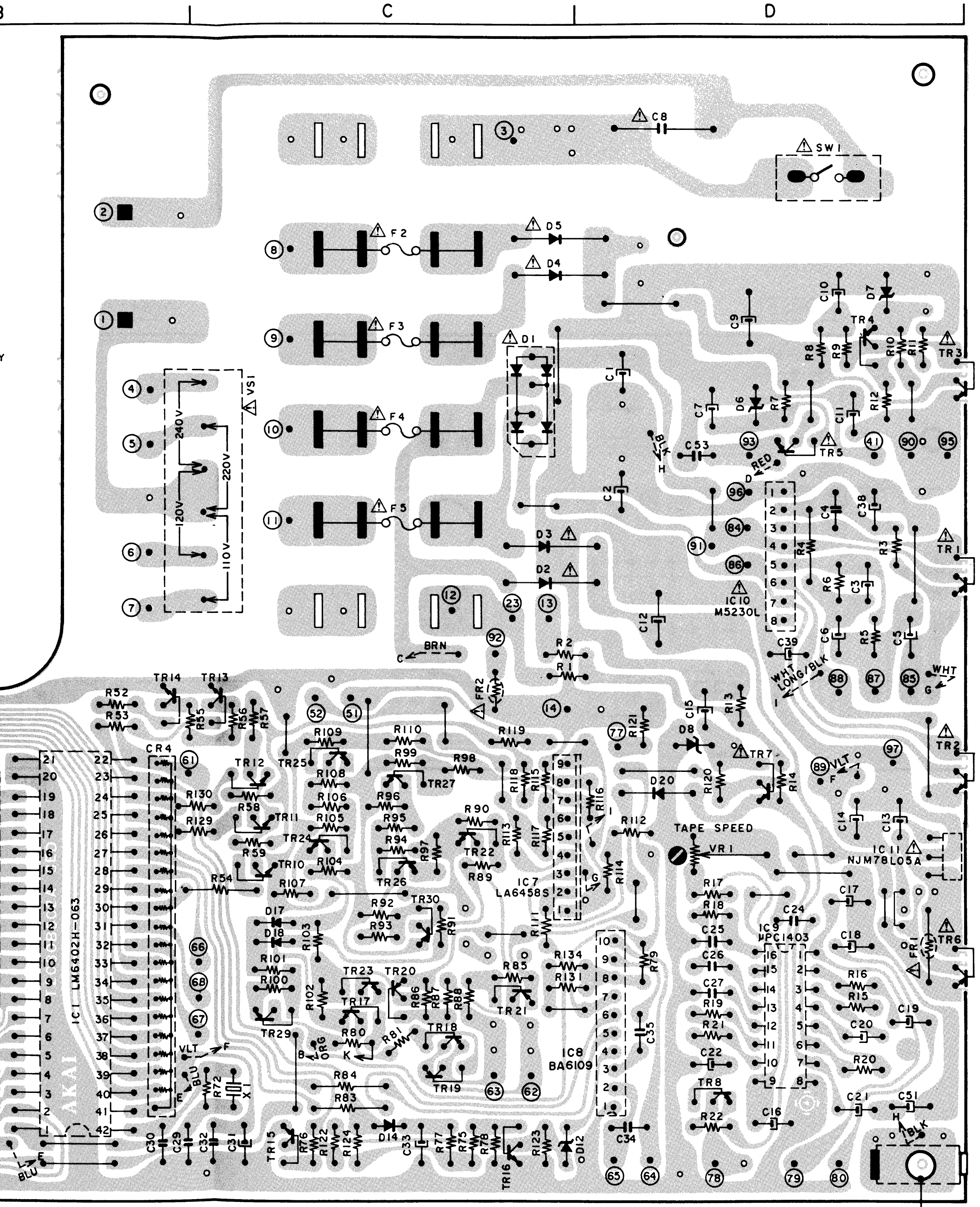
IC

IC1, 2 -------- B3
IC3 to 6 ------ A3
IC7 --------- C3
IC8, 9 -------- D3
IC10 -------- D2
IC11 -------- D3

TERMINAL

①, ②--------B1
③ ---------C1
④ ---------B1
⑤ to ⑦ -------B2
⑧, ⑨--------C1
⑩ to ⑭ -------C2
⑮ to ㉑ -------A3
㉓ ---------C2
㉔ to ㉟ -------A3
㊱ to ㊴ -------B3
㊵ ---------B2
㊶ ---------D2
㊷, ㊸--------A2
㊹ to ㊽ -------B3
㊾, ㊿--------B2
(51), (52)--------C2
(53) ---------A2
(54) to (57) -------A3
(58) to (60) -------B3
(61) ---------B2
(62), (63)--------C3
(64), (65)--------D3
(66) to (70) -------B3
(71) ---------A3
(72) to (74) -------B3
(75), (76)--------A3
(77) ---------D2
(78) to (80) -------D3
(81) to (83) -------A2
(84) to (91) -------D2
(92) ---------C2
(93) ---------D2
(94) ---------A3
(95) to (97) -------D2

ON P.C BOARD T2030B502C (2ED)


B
C
D
F2
F3
F4
F5
C8
SW1
D1
D2
D3
D4
D5
D6
D7
D8
D12
D14
D17
D18
D20
VS1
240V
220V
120V
110V
TR1
TR2
TR3
TR4
TR5
TR6
TR7
TR8
TR10
TR11
TR12
TR13
TR14
TR15
TR16
TR17
TR18
TR19
TR20
TR21
TR22
TR23
TR24
TR25
TR26
TR27
TR29
TR30
IC1 LM6402H-063
IC7 LA6458S
IC8 BA6109
IC9 μPC1403
IC10 M5230L
IC11 NJM78L05A
TAPE SPEED
VR1
FR1
FR2
BRN
RED
BLU
WHT
ORG
LONG/BLK
VLT
AKAI

SYSCON PCB T2030B502A

PONENTS. FOR CONTINUED SAFETY,
ONENTS ONLY WITH MANUFACTURER'S

S CRITIQUES DE SÛRETÉ. POUR
 DE L'APPAREIL NE REMPLACER LES
MENT EST CRITIQUE POUR LA SECURITE
EES PAR LE FABRICANT

U MODEL

POWER

LOCATION OF COMPONENTS

TR

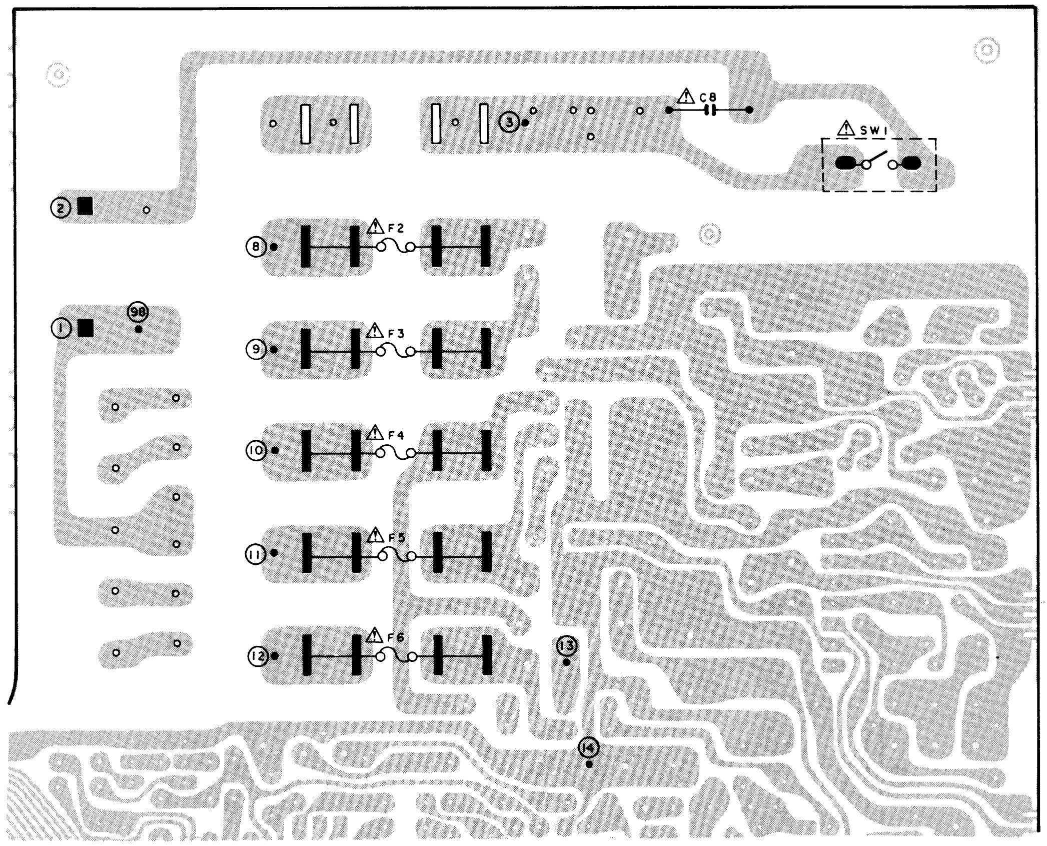
TR1, 2	D2
TR3, 4	D1
TR5	D2
TR6	D3
TR7	D2
TR8	D3
TR9	B2
TR10, 11	C3
TR12, 13	C2
TR14	B2
TR15 to 24	C3
TR25	C2
TR26	C3
TR27	C2
TR29, 30	C3

IC

IC1, 2	B3
IC3 to 6	A3
IC7	C3
IC8, 9	D3
IC10	D2
IC11	D3

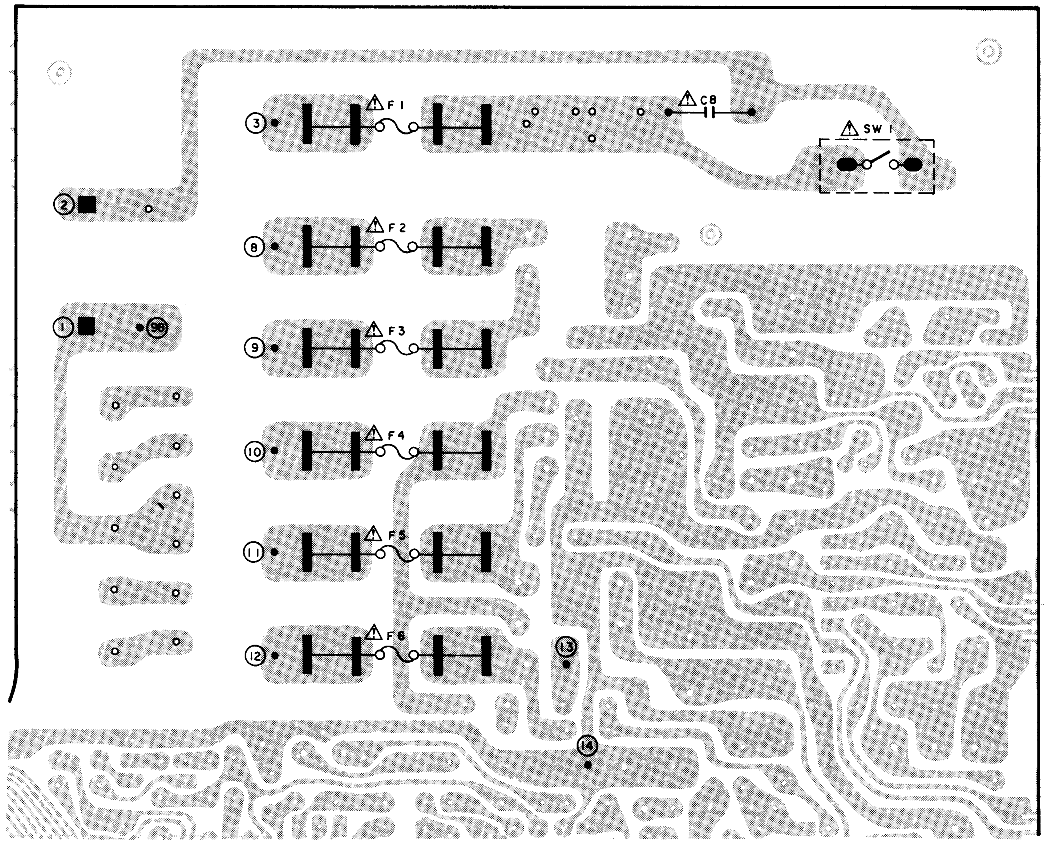
TERMINAL

①, ②	B1
③	C1
④	B1
⑤ to ⑦	B2
⑧, ⑨	C1
⑩ to ⑭	C2
⑮ to ㉑	A3
㉓	C2
㉔ to ㉟	A3
㊱ to ㊴	B3
㊵	B2
㊶	D2
㊷, ㊸	A2
㊹ to ㊽	B3
㊾, ㊿	B2
(51), (52)	C2
(53)	A2
(54) to (57)	A3
(58) to (60)	B3
(61)	B2
(62), (63)	C3
(64), (65)	D3
(66) to (70)	B3
(71)	A3
(72) to (74)	B3
(75), (76)	A3
(77)	D2
(78) to (80)	D3
(81) to (83)	A2
(84) to (91)	D2
(92)	C2
(93)	D2
(94)	A3
(95) to (97)	D2


C8
SW1
F2
F3
F4
F5
F6

J,C,A,E,V,S MODEL

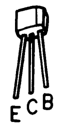
POWER


F1
C8
SW1
F2
F3
F4
F5
F6

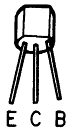
B MODEL

POWER

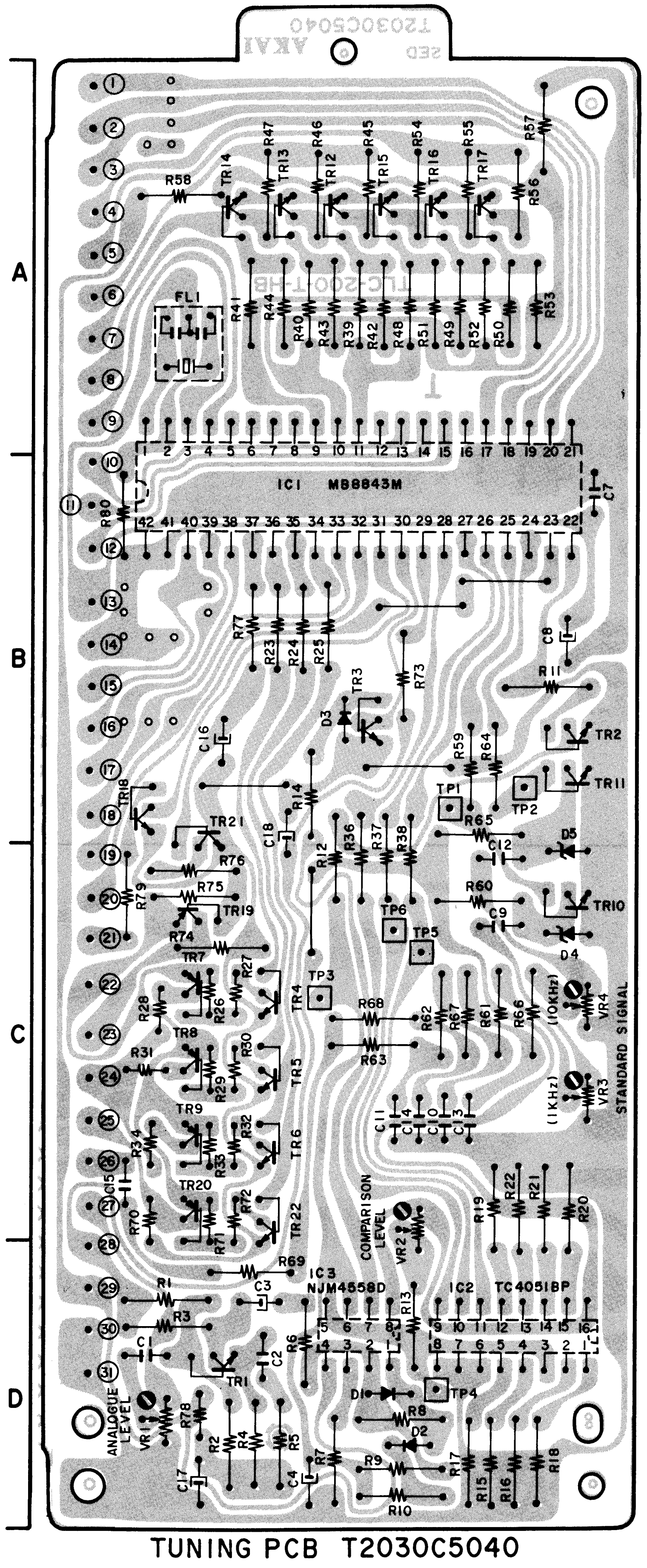
3) TUNING P.C BOARD T2030C5040 (2ED)



2SA1115



2SC536


A
B
C
D
AKAI T2030C5040 2ED
FL1
IC1 MB8843M
IC2 TC4051BP
IC3 NJM4558D
TR1
TR2
TR3
TR4
TR5
TR6
TR7
TR8
TR9
TR10
TR11
TR12
TR13
TR14
TR15
TR16
TR17
TR18
TR19
TR20
TR21
TR22
TP1
TP2
TP3
TP4
TP5
TP6
D1
D2
D3
D4
D5
VR1
VR2
VR3
VR4
STANDARD SIGNAL
(10KHz)
(1KHz)
COMPARISON LEVEL
ANALOGUE LEVEL

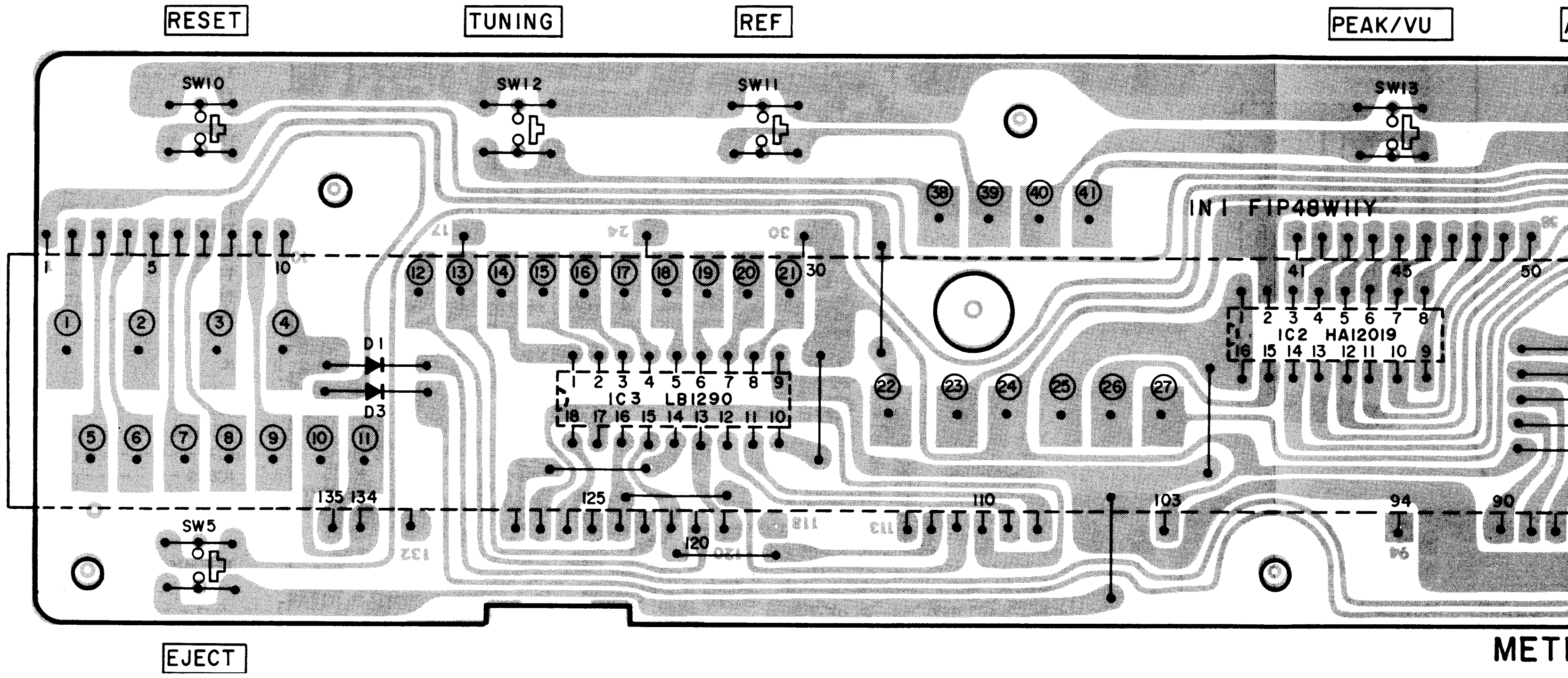
TUNING PCB T2030C5040

TR1 to 6,10 to18,21,22
2SC536K-NP(E,F)

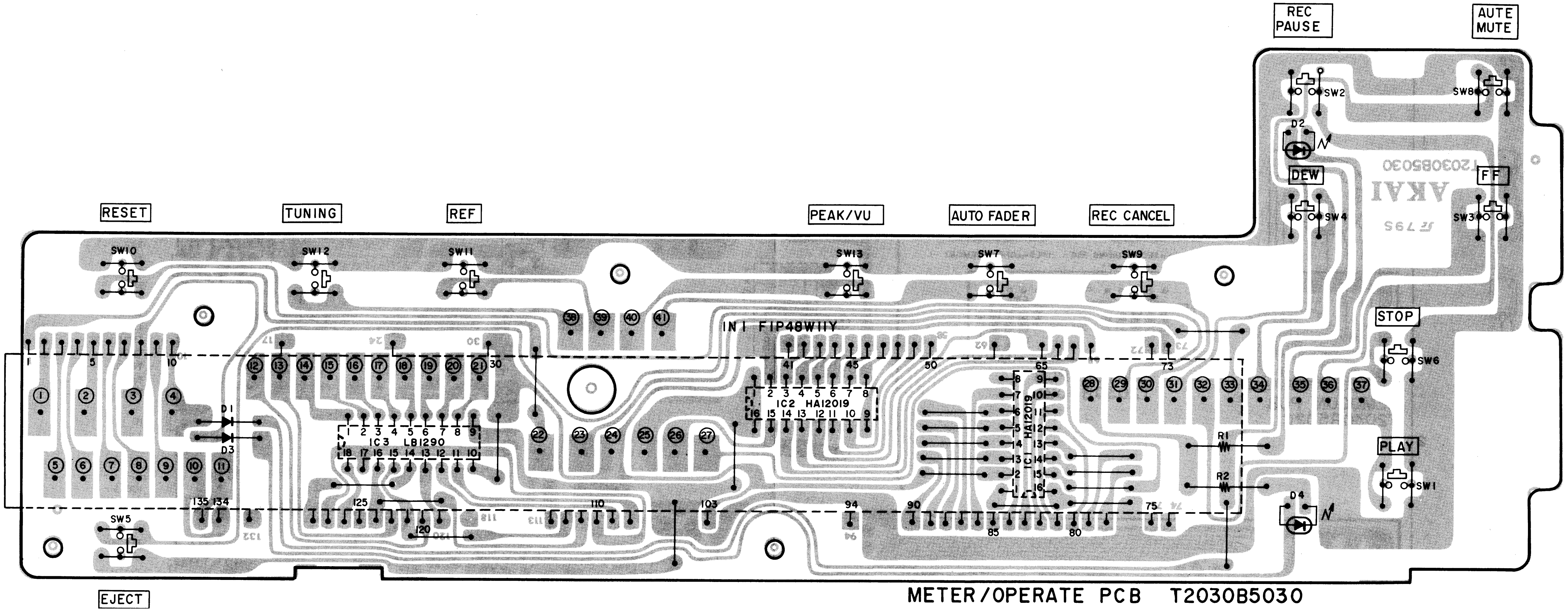
TR7 to 9,19,20
2SA1115(E,F)

LOCATION OF COMPONENTES
IC
IC1—B
IC2,3—D
TR
TR1—D
TR2,3—B
TR4 to 10—C
TR11—B
TR12 to 17—A
TR18—B
TR19 to 22—C

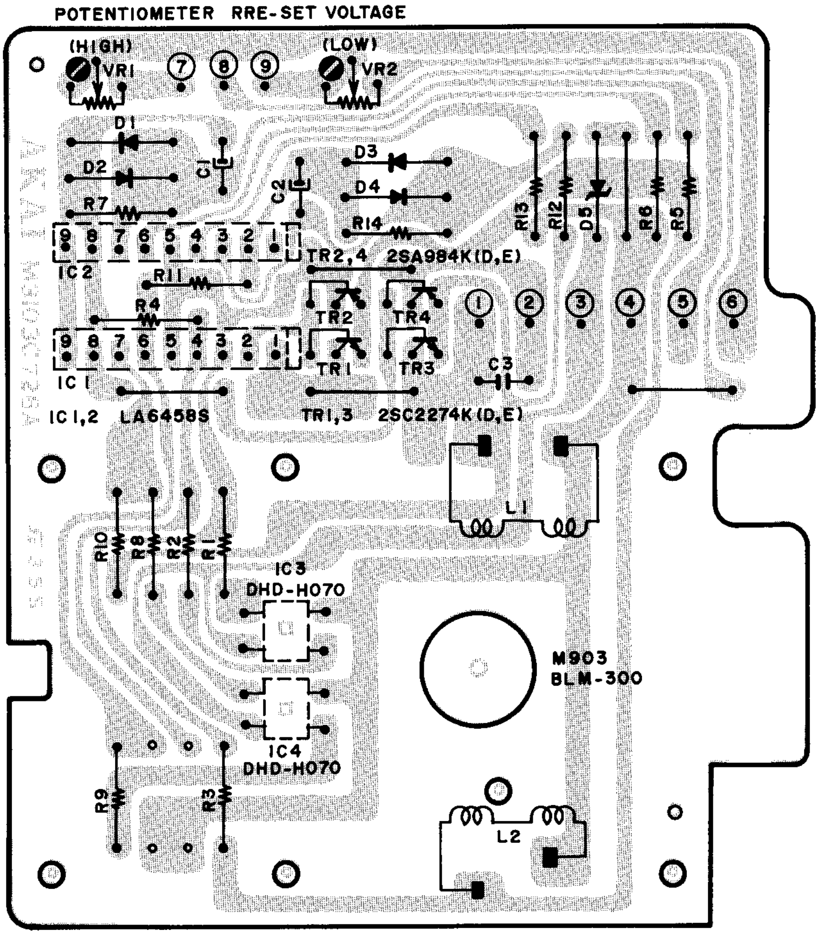
4) METER/OPERATE P.C BOARD T2030B5030


RESET
TUNING
REF
PEAK/VU
EJECT
SW10
SW12
SW11
SW13
SW5
D1
D3
IC3 LB1290
IC2 HA12019
IN1 FIP48W11Y
METE

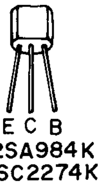
4) METER/OPERATE P.C BOARD T2030B5030

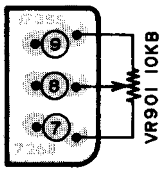

REC PAUSE
AUTE MUTE
SW2
SW8
D2
DEW
FF
SW4
SW3
RESET
TUNING
REF
PEAK/VU
AUTO FADER
REC CANCEL
SW10
SW12
SW11
SW13
SW7
SW9
STOP
SW6
IN1 FIP48W11Y
IC3 LB1290
IC2 HA12019
IC1 HA12019
D1
D3
R1
R2
PLAY
SW1
D4
SW5
EJECT
METER/OPERATE PCB T2030B5030

5) MOTOR P.C BOARD M3103C726A and POTENTION P.C BOARD M3103C726B


POTENTIOMETER RRE-SET VOLTAGE
(HIGH)
VR1
⑦ ⑧ ⑨
(LOW)
VR2
D1
D2
R7
C1
C2
D3
D4
R14
R13
R12
D5
R6
R5
IC2
9 8 7 6 5 4 3 2 1
TR2,4 2SA984K(D,E)
R11
R4
TR2
TR4
① ② ③ ④ ⑤ ⑥
9 8 7 6 5 4 3 2 1
TR1
TR3
C3
IC1
IC1,2 LA6458S
TR1,3 2SC2274K(D,E)
L1
R10
R8
R2
R1
IC3
DHD-H070
M903
BLM-300
IC4
DHD-H070
R9
R3
L2

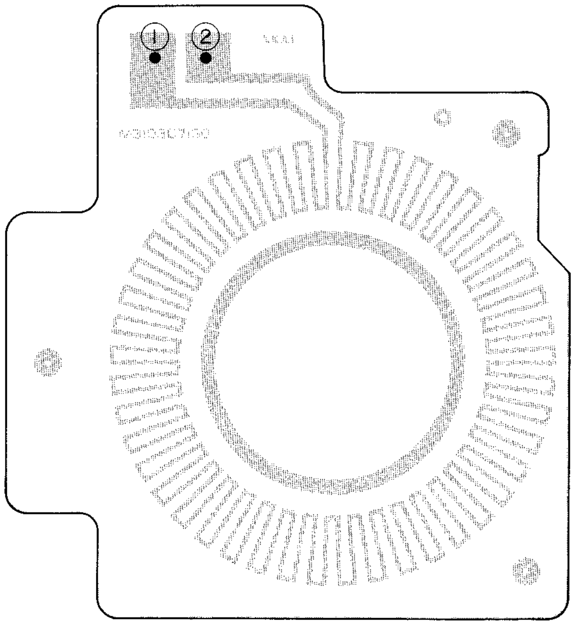
MOTOR PCB M3103C726A


E C B
2SA984K
2SC2274K

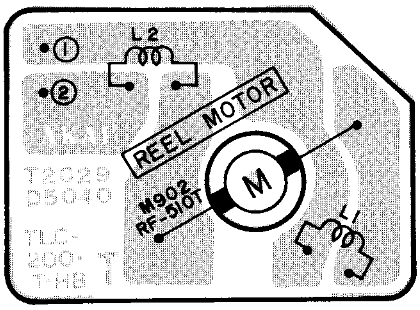

⑨
⑧
⑦
VR901 10KB

POTENTION PCB M3103C726B

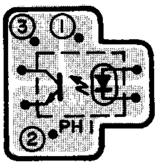
6) FG P.C BOARD M3103C7130



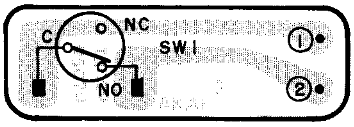
7) FILTER P.C BOARD T2029D5040


①
②
L2
REEL MOTOR
M902
RF-510T
M
L1
AKAI
T2029
D5040
TLC-
200-

8) DETECTOR P.C BOARD T2029D5030



9) MICRO SW P.C BOARD T2029D5020


C
NC
NO
SW1
①
②

SECTION 4

SERVICE MANUAL

MODEL GX-F71

TABLE OF CONTENTS

I. SPECIFICATIONS 4- 2
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VI. MECHANICAL ADJUSTMENT 4- 7
VII. HEAD ADJUSTMENT 4-10
VIII. AMPLIFIER ADJUSTMENT 4-12
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X. CLASSIFICATION OF VARIOUS P.C BOARDS 4-16
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  2. COMPOSITION OF VARIOUS P.C BOARDS 4-17

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

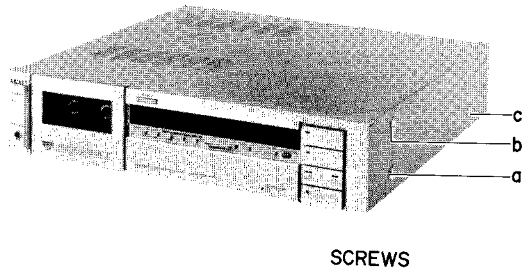
TRACK SYSTEM	4 Track 2 Channel Stereo System
TAPE	Philips Type Cassette
TAPE SPEED	4.76 cm/s ± 1.0% (1-7/8 ips. ±1.0%)
HEADS	Super GX head for recording x 1 Super GX head for playback x 1 Erase head x 1
MOTORS	FG servo D.C. motor for direct capstan drive x 1 D.C. motor for reel drive x 1
WOW & FLUTTER	0.08% WTD (DIN) 0.028% WRMS
TAPE WINDING TIME	90 sec. using a C-60 cassette tape
FREQUENCY RESPONSE	Normal: 20 to 17,000 Hz ± 3 dB (–20 VU) CrO_2: 20 to 18,000 Hz ± 3 dB (–20 VU) Metal: 20 to 21,000 Hz ± 3 dB (–20 VU)
FREQUENCY RANGE	Normal: 15 to 18,000 Hz CrO_2: 15 to 20,000 Hz Metal: 15 to 21,000 Hz
SIGNAL TO NOISE RATIO	Metal: Better than 60 dB (measured via tape with peak recording level) Dolby B-type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz Dolby C-type NR switch ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz
HARMONIC DISTORTION	1 kHz, 3rd harmonic distortion Metal: Less than 0.8%
INPUT	Line. 70 mV (input impedance: 47 kohms)
OUTPUT	Line: 410 mV at 0 VU Required load impedance: more than 20 kohms Phone: 1.3 mW/8 ohms at 0 VU
DIN	Input: 2.0 mV (input impedance: 10 kohms) Output: 410 mV Required load impedance: more than 20 kohms
POWER REQUIREMENTS	100V, 50/60 Hz for Japan 120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK and Australia 110V/120V/220V/240V, 50/60 Hz switchable for other countries.
POWER CONSUMPTION	U Model: 30W C, A, J Model: 28W
DIMENSIONS	440(W) x 100(H) x 377(D) mm (17.3 x 3.9 x 14.8″)
WEIGHT	7.4 kg (16.3 lbs)

* For improvement purposes, specifications and design are subject to change without notice.
* "Dolby" and the Double D symbol are trademarks of Dolby Laboratories.
(Manufactured under license from Dolby Laboratories.)

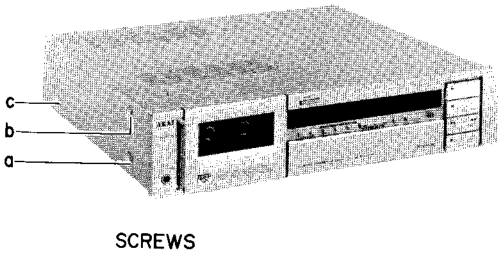
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

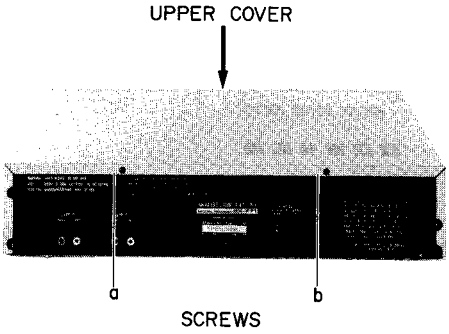
1



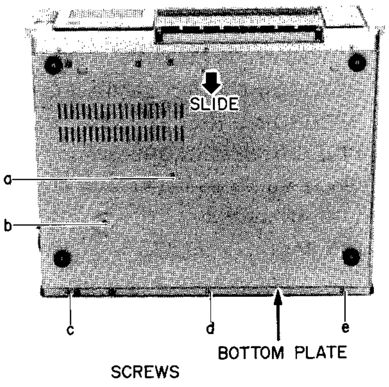
2



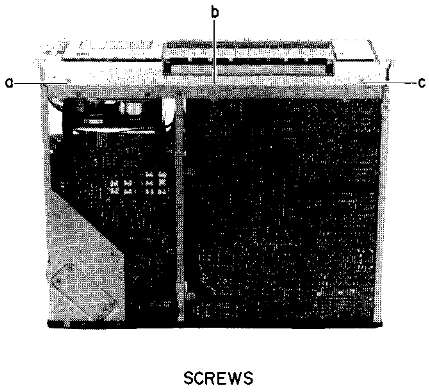
3


UPPER COVER
a
b
SCREWS

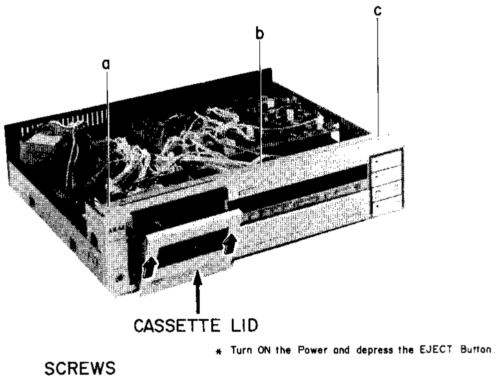
4


SLIDE
a
b
c
d
e
BOTTOM PLATE
SCREWS

5

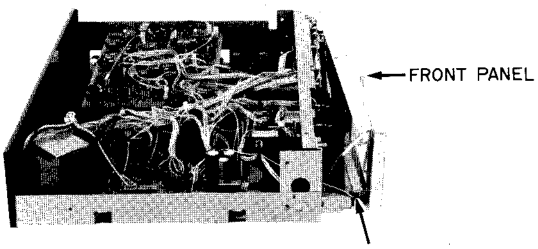


6


c
b
a
CASSETTE LID
SCREWS

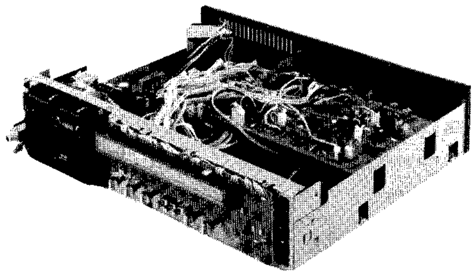
* Turn ON the Power and depress the EJECT Button.

7


FRONT PANEL

Remove the Power indicator Lamp.

8



III. CONTROLS

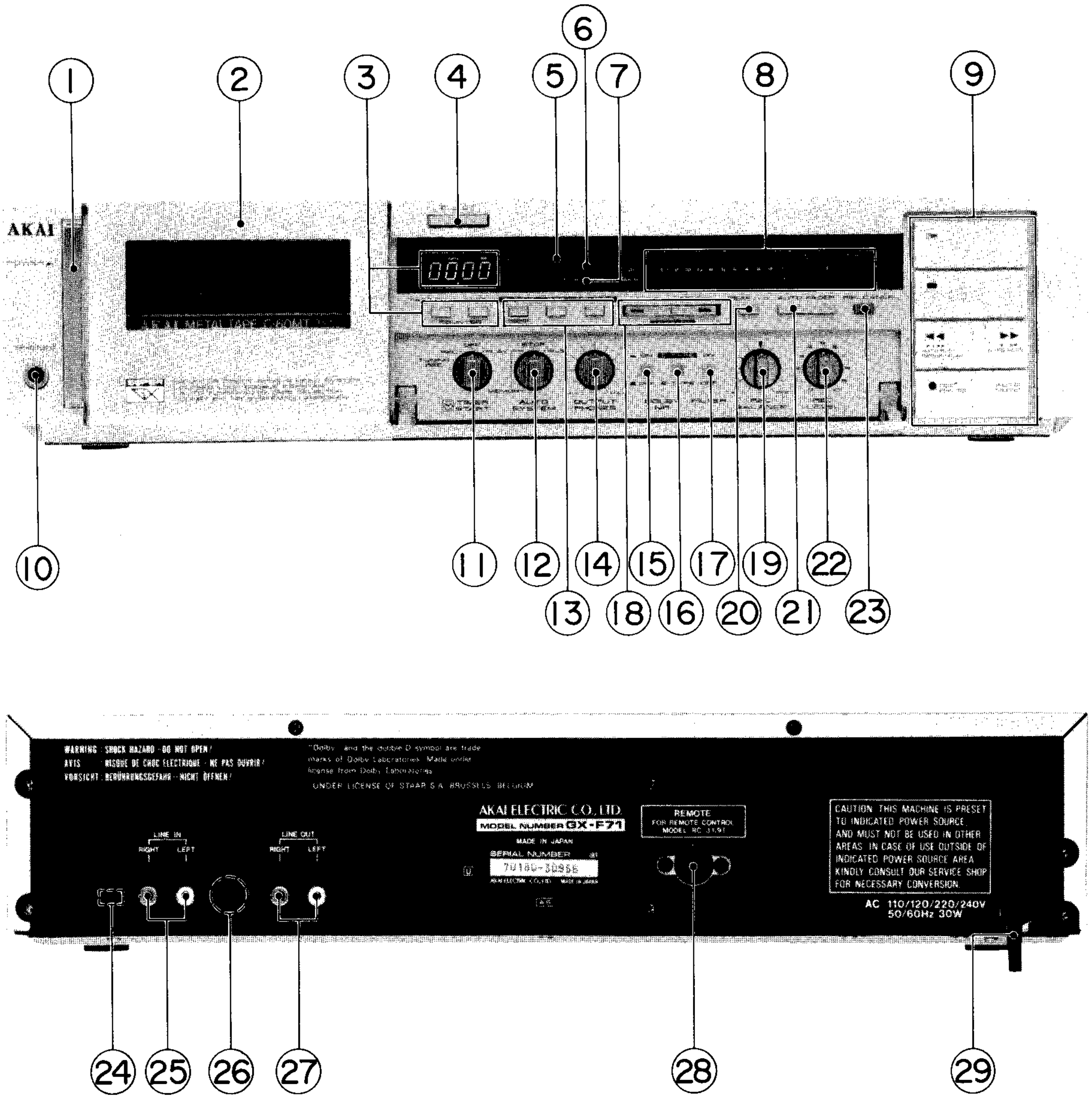

6
1
2
3
4
5
7
8
9
AKAI
0000
10
11
12
14
15
17
19
22
13
18
16
20
21
23
LINE IN
RIGHT LEFT
LINE OUT
RIGHT LEFT
AKAI ELECTRIC CO., LTD.
MODEL NUMBER GX-F71
MADE IN JAPAN
SERIAL NUMBER
REMOTE
FOR REMOTE CONTROL
CAUTION THIS MACHINE IS PRESET TO INDICATED POWER SOURCE AND MUST NOT BE USED IN OTHER AREAS. IN CASE OF USE OUTSIDE OF INDICATED POWER SOURCE AREA KINDLY CONSULT OUR SERVICE SHOP FOR NECESSARY CONVERSION.
AC 110/120/220/240V 50/60Hz 30W
24
25
26
27
28
29

Fig. 1 Controls

1. POWER SWITCH
2. CASSETTE RECEPTACLE
3. FLD TAPE COUNTER, TAPE/TIME SELECTOR and RESET BUTTON
4. EJECT BUTTON
5. TAPE POSITION INDICATORS
6. AUTO TAPE TUNING INDICATORS
7. DOLBY B and DOLBY C and FILTER INDICATORS
8. FLD BAR METER with MAXIMUM INPUT LEVEL INDICATORS
9. OPERATING BUTTONS
   PLAY (▶) BUTTON with INDICATOR
   STOP (■) BUTTON
   REWIND (◀◀) BUTTON
   FAST FORWARD (▶▶) BUTTON
   RECORDING (REC)/PAUSE BUTTON with INDICATOR
   AUTO MUTE BUTTON
10. HEADPHONE (PHONES) JACK
11. TIMER START SELECTOR
12. AUTO SYSTEM SELECTOR
13. TUNING and REFERENCE (REF) BUTTONS
14. OUTPUT/HEADPHONE (PHONES) CONTROL
15. DOLBY NR SWITCH
16. DOLBY NR SELECTOR
17. MPX FILTER SWITCH
18. MONITOR SELECTOR
19. RECORDING (REC) BALANCE CONTROL (LEFT and RIGHT)
20. PEAK/VU SELECTOR
21. AUTO FADER BUTTON
22. RECORDING (REC) LEVEL CONTROL
23. RECORDING (REC) CANCEL BUTTON
24. LINE/DIN SELECTOR
   (Some models do not have this facility)
25. LINE IN JACKS
26. DIN JACK
   (Some models are not equipped with this facility.)
27. LINE OUT JACKS
28. REMOTE JACK
29. POWER CORD

IV. PRINCIPAL PARTS LOCATION

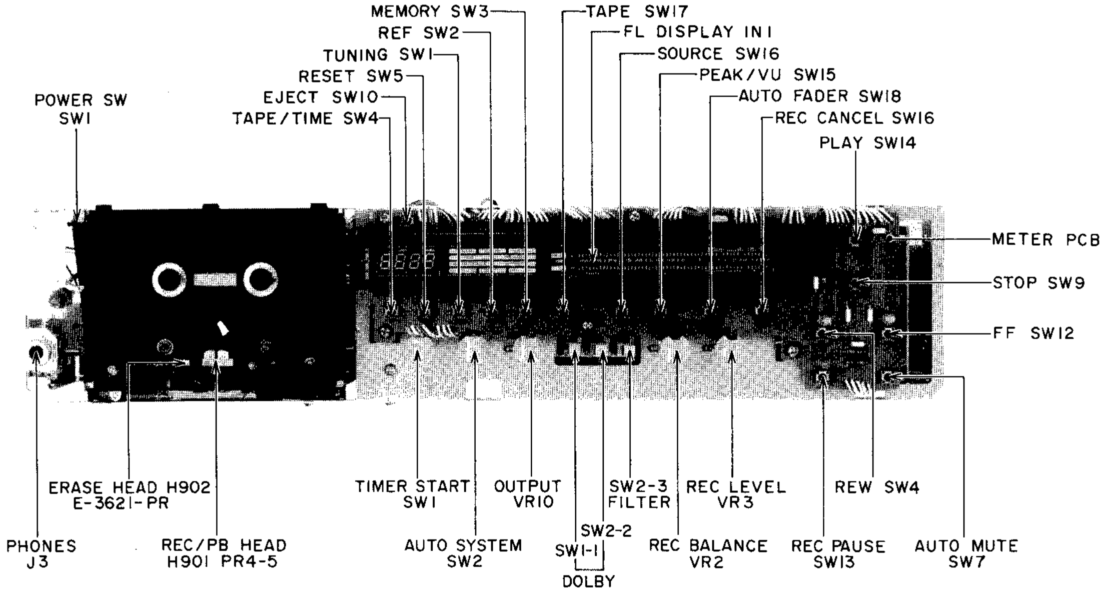

MEMORY SW3
REF SW2
TUNING SW1
RESET SW5
EJECT SW10
TAPE/TIME SW4
POWER SW SW1
TAPE SW17
FL DISPLAY IN1
SOURCE SW16
PEAK/VU SW15
AUTO FADER SW18
REC CANCEL SW16
PLAY SW14
METER PCB
STOP SW9
FF SW12
ERASE HEAD H902 E-3621-PR
PHONES J3
REC/PB HEAD H901 PR4-5
TIMER START SW1
AUTO SYSTEM SW2
OUTPUT VR10
SW2-3 FILTER
SW2-2
SW1-1
DOLBY
REC LEVEL VR3
REC BALANCE VR2
REW SW4
REC PAUSE SW13
AUTO MUTE SW7

Fig. 2 Front View

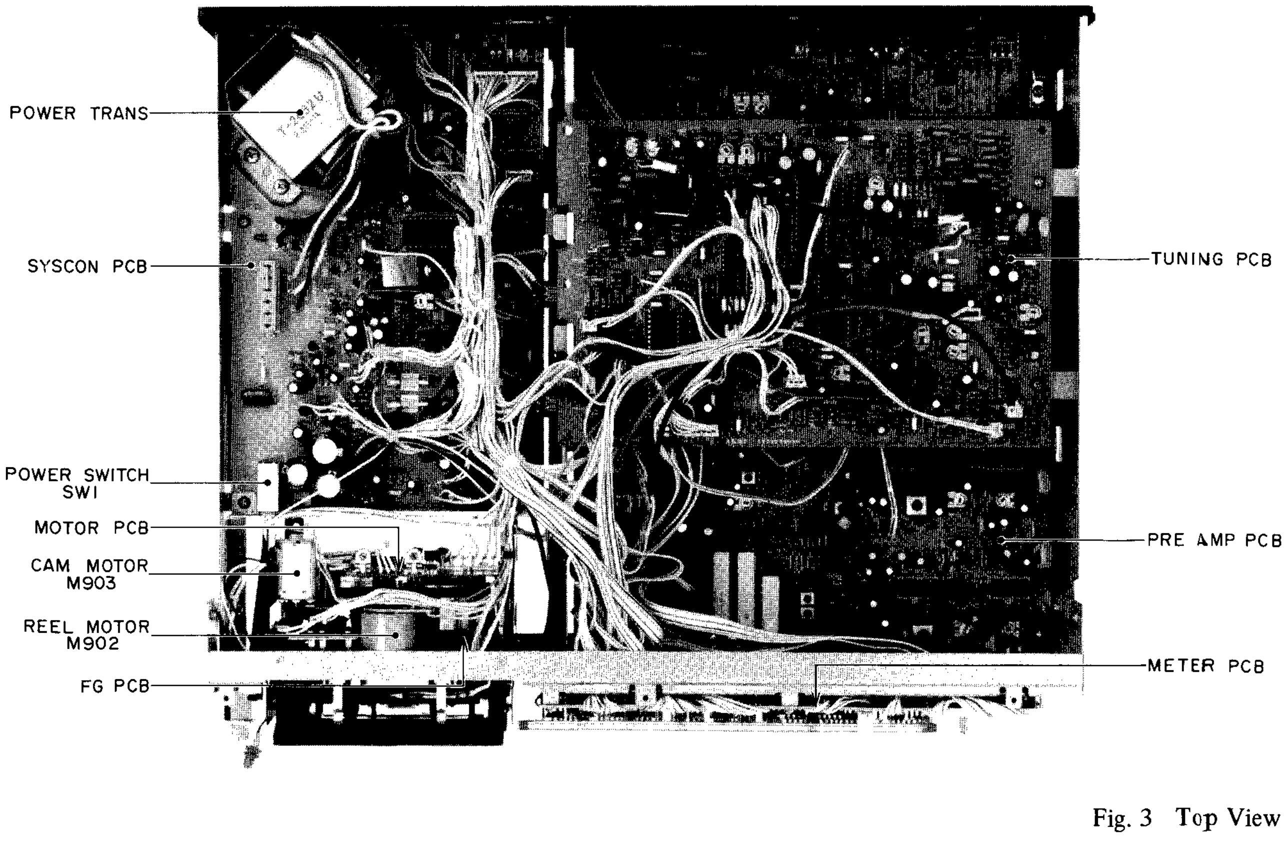

POWER TRANS
SYSCON PCB
POWER SWITCH SW1
MOTOR PCB
CAM MOTOR M903
REEL MOTOR M902
FG PCB
TUNING PCB
PRE AMP PCB
METER PCB

Fig. 3 Top View

V. VOLTAGE CONVERSION

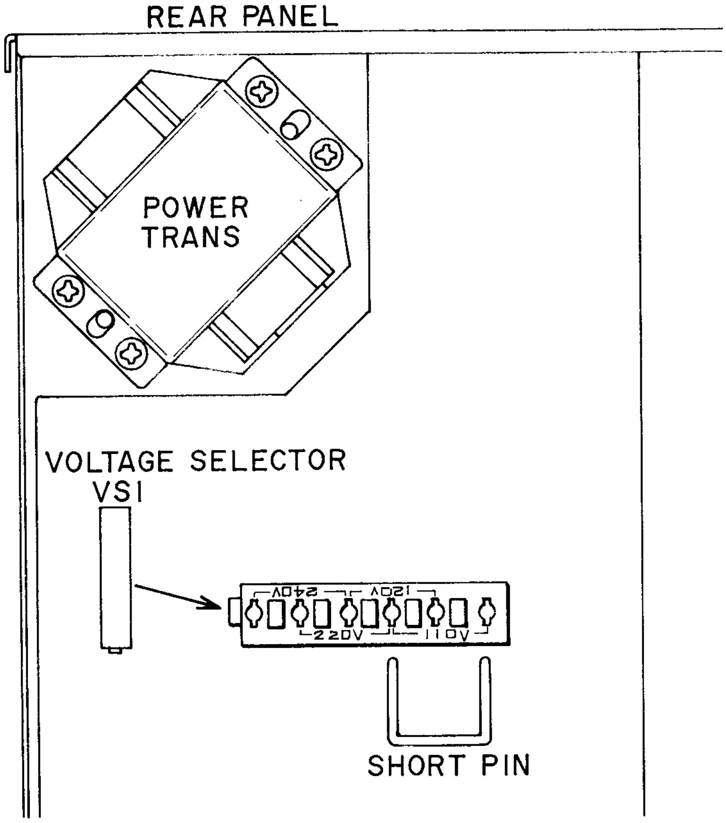

REAR PANEL
POWER TRANS
VOLTAGE SELECTOR
VS1
240V
120V
220V
110V
SHORT PIN

Fig. 4 Voltage Conversion (U Model)

1. VOLTAGE CONVERSION

Models for Canada, Europe, USA, UK, Australia and Japan are not equipped with this facility.

Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V or 240V as required.

If voltage change is necessary, this can be accomplished as follows:

1) Disconnect power cord.
2) Loosen holding screws and remove upper cover.
3) Remove short pin plug from present holes and replace in correct holes. Follow the markings explicitly.

2. CYCLE CONVERSION

With DC motor, cycle conversion is not necessary.

VI. MECHANICAL ADJUSTMENT

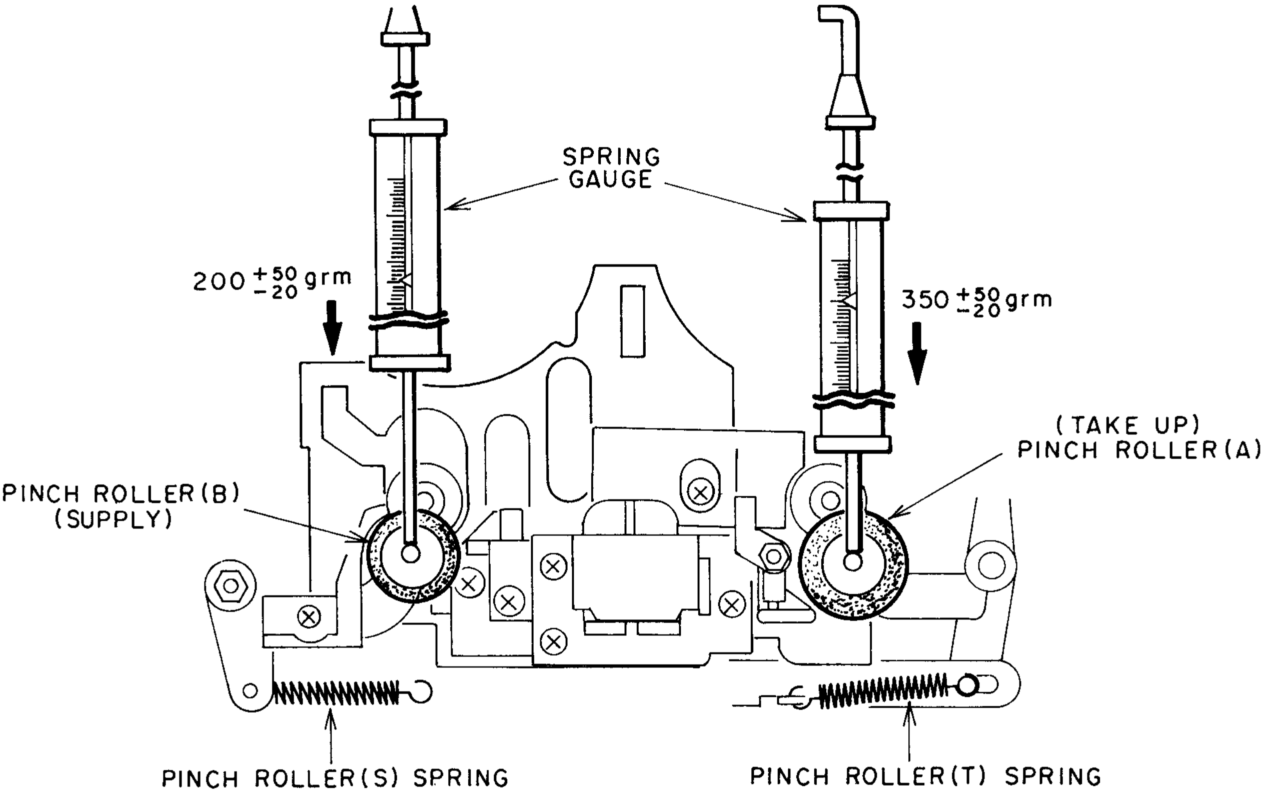

SPRING GAUGE
200 $^{+50}_{-20}$ grm
350 $^{+50}_{-20}$ grm
(TAKE UP)
PINCH ROLLER(A)
PINCH ROLLER(B)
(SUPPLY)
PINCH ROLLER(S) SPRING
PINCH ROLLER(T) SPRING

Fig. 5

1. PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 5)

Put in PLAY mode. Push pinch roller arm down with the spring gauge push the pinch roller 1 ~ 2 mm from the capstan and release slowly. Read the spring gauge at the moment the pinch roller touches the capstan and begins to rotate.

Specified pressure: 350 $^{+50}_{-20}$ grm (Take up)

200 $^{+50}_{-20}$ grm (Supply)

If there is no measurement obtained, replace the pinch roller spring.

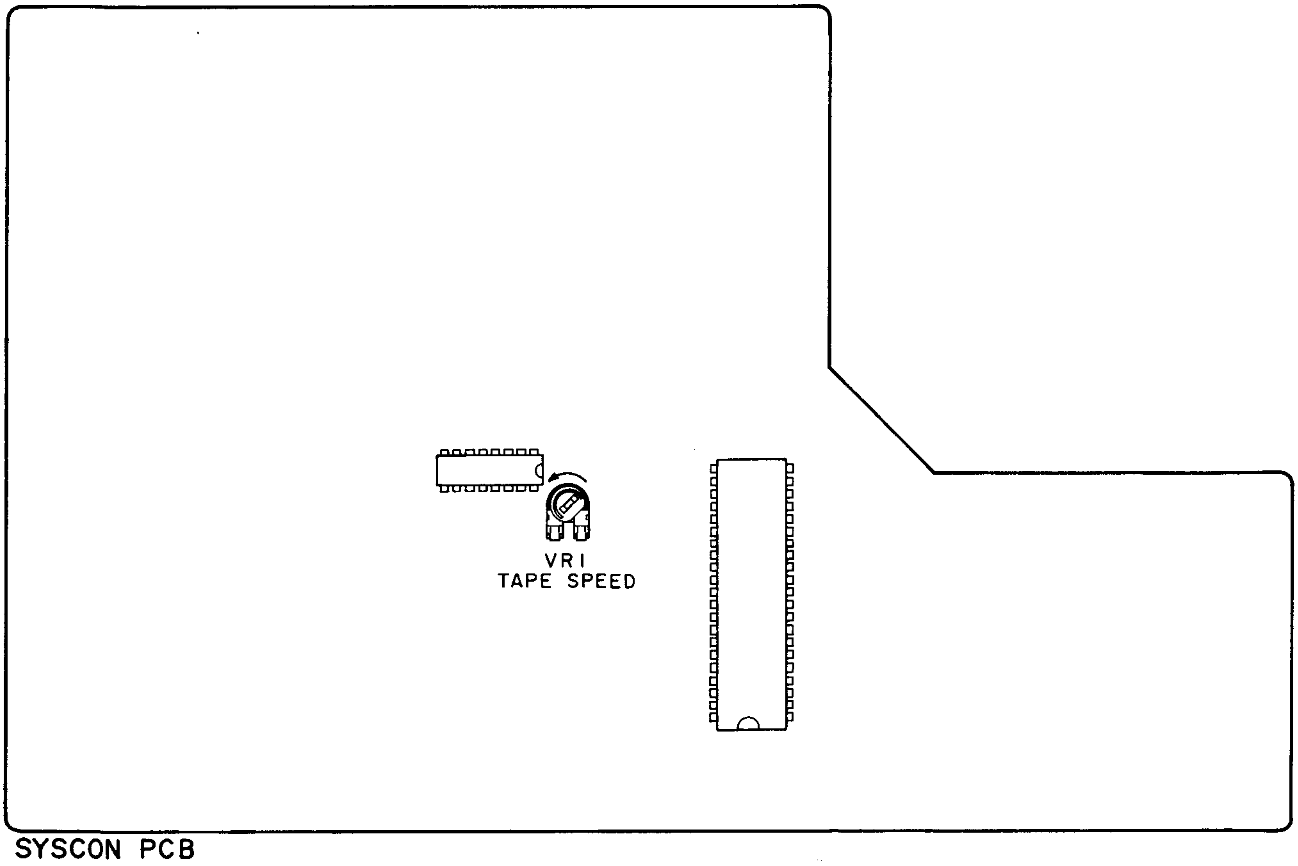


Fig. 6

2. TAPE SPEED ADJUSTMENT

Connect a frequency counter to line output terminals. Playback a 1,000 Hz pre-recorded test (TF-102CS) tape and adjust tape speed adjustment volume (SYSCON PCB VR1) to obtain a tape speed of 995 Hz to 1000 Hz.

3. HOW TO INSTALL VOLUME (VR901) AND CAM WHEEL

Refer to Section 2-V-3 (GX-F31).

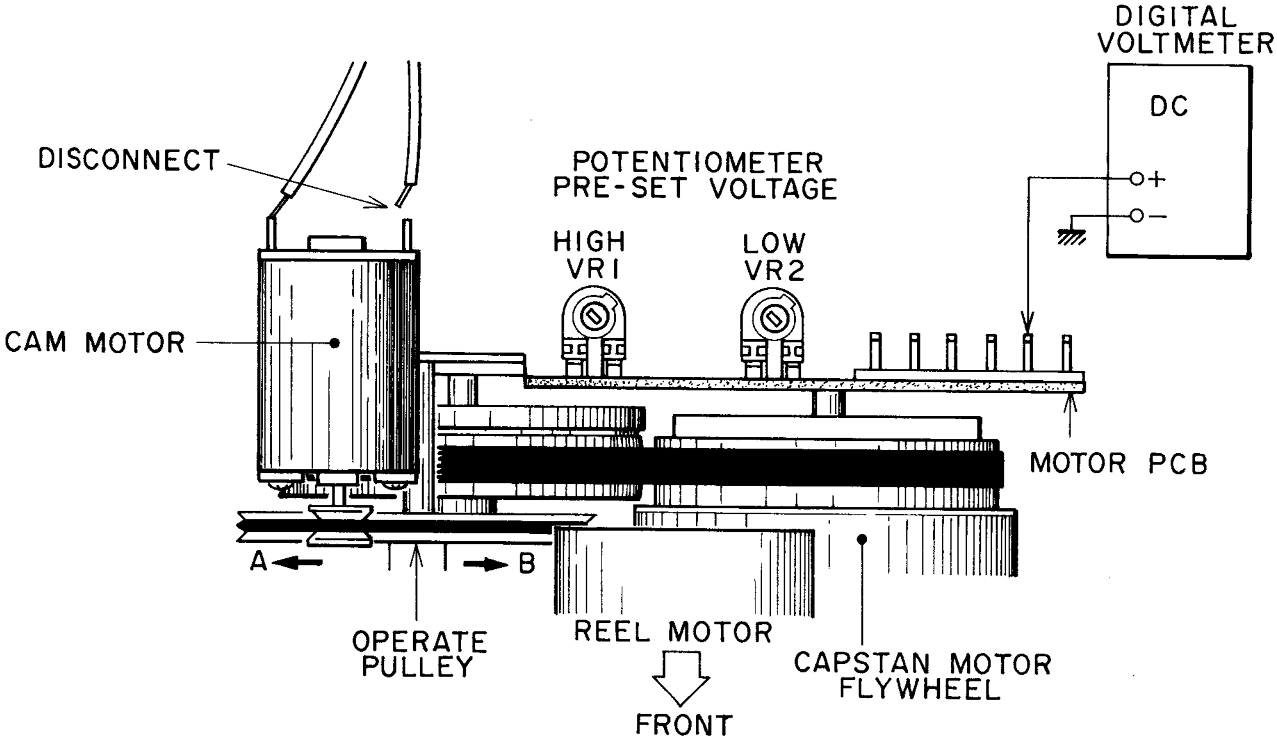

DIGITAL VOLTMETER
DC
+
−
DISCONNECT
POTENTIOMETER PRE-SET VOLTAGE
HIGH VR1
LOW VR2
CAM MOTOR
MOTOR PCB
A
B
OPERATE PULLEY
REEL MOTOR
FRONT
CAPSTAN MOTOR FLYWHEEL

Fig. 7-1

4. POTENTIOMETER PRESET VOLTAGE ADJUSTMENT (Refer to Fig. 4)

1) LOW VOLTAGE ADJUSTMENT

a. With power OFF, remove the connecting cord of the cam motor and turn the operate pulley fully with your fingers in A direction.

b. Connect the digital voltmeter as shown in Fig. 7-1.

c. With power ON, adjust VR2 so that the voltage reading will be 0.78V (DC).

2) HIGH VOLTAGE ADJUSTMENT

a. With power OFF, turn the operate pulley fully with your fingers in B direction.

b. With power ON, adjust VR1 so that the voltage reading will be 6.73V (DC).

3) Repeat Items 1) and 2).

4) a. With Power OFF, connect the connecting cord of the motor.

b. Remove the digital voltmeter.

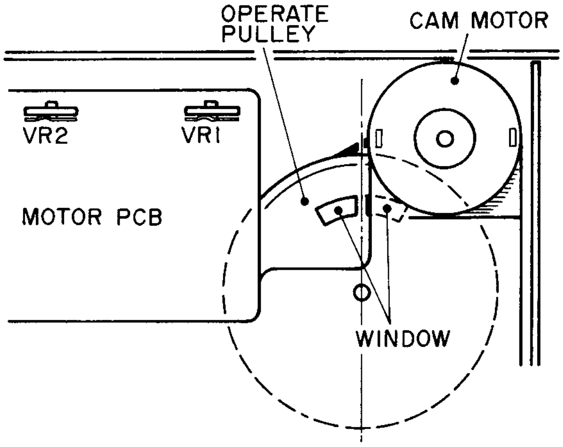

OPERATE PULLEY
CAM MOTOR
VR2
VR1
MOTOR PCB
WINDOW

Fig. 7-2 Position of Operate Pulley in STOP Mode

5) a. Set power to ON.

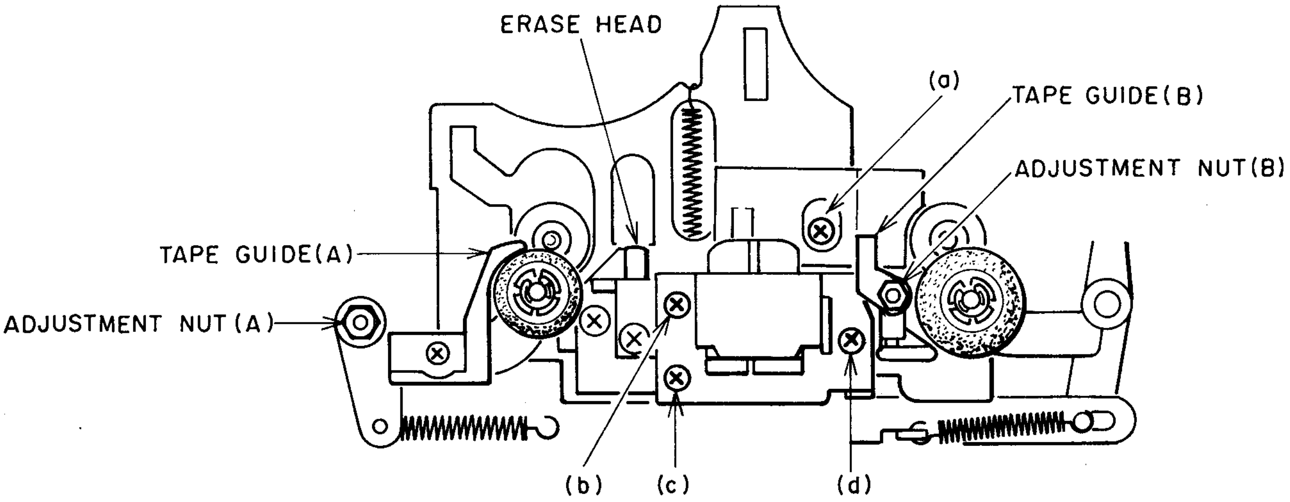
b. Adjust VR1 slightly so that a center line between windows of the operate pulley will face directly above during STOP Mode. (Fig. 7-2)

c. Remove the cassette lid and set the AUTO SYSTEM switch to IPLS Mode.

d. Confirm that the head and pinch roller do not move up and down when the FF and REW switches are alternately depressed.

e. Turn the reel with fingers in STOP Mode to check that the brake works sufficiently.
When the brake acts normally, the take-up reel does not turn clockwise while the supply reel does not rotate counterclockwise.

VII. HEAD ADJUSTMENT


ERASE HEAD
(a)
TAPE GUIDE(B)
ADJUSTMENT NUT(B)
TAPE GUIDE(A)
ADJUSTMENT NUT (A)
(b)
(c)
(d)

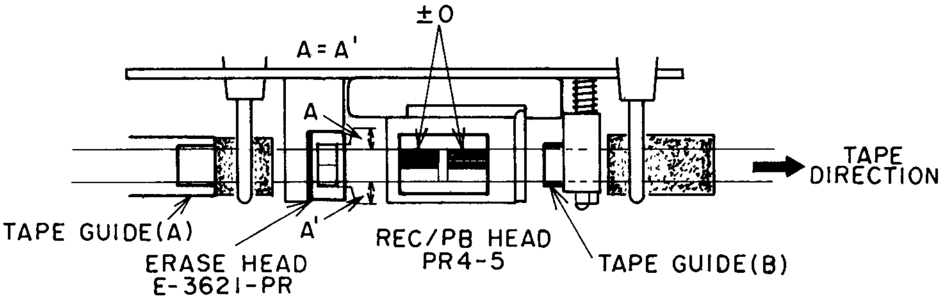

±0
A = A'
A
A'
TAPE DIRECTION
TAPE GUIDE(A)
ERASE HEAD
E-3621-PR
REC/PB HEAD
PR4-5
TAPE GUIDE(B)

Fig. 8

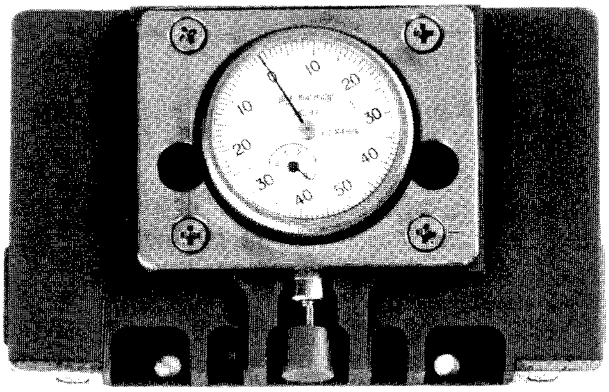


Fig. 9 Cassette Head Projection Gauge (TF-111CJ)

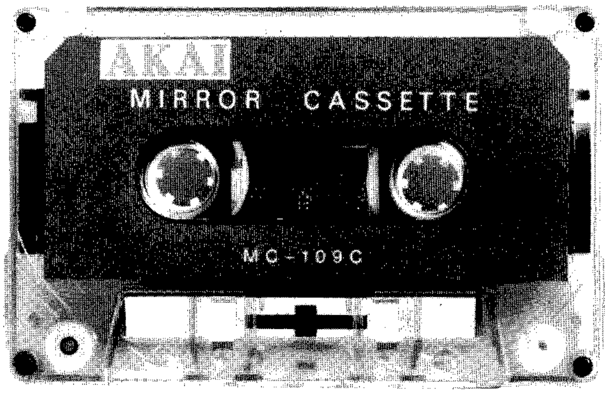

AKAI
MIRROR CASSETTE
MC-109C

Fig. 10 Mirror Cassette Tape (TF-109CM)

1. REC/PB HEAD PROJECTION ADJUSTMENT

Set the cassette head projection gauge (TF-111CJ) and set to PLAY mode. Loosen the screw (a) and adjust so that the gauge indication at that time will be 3.2 ± 0.05 mm. After adjustment, apply paintlock on the screw (a).

2. TAPE GUIDE HEIGHT ADJUSTMENT

1) Set the mirror cassette tape (TF-109CM) and set to PLAY mode.
2. Adjust the tape guide (A) so that the parts of the erase head coming out of both sides of the tape (A and A' in Fig. 8) will be equal. For the adjustment, use the adjustment nut (A).
3) Adjust the tape guide (B) so that the tape runs smoothly and is not hitched by the tape guide. For the adjustment, use the adjustment nut (B).
4) After adjustment, paint-lock the adjustment nuts (A) and (B).

3. REC/PB HEAD HEIGHT ADJUSTMENT

1) Set the mirror cassette tape and set to PLAY mode.
2) Adjust the screws (b), (c) and (d) so that the upper edge of REC/PB head Lch core and the upper side of the tape is in alignment.
3) Playback the head height adjustment tape (4Tr 1,000 Hz) (TF-103CF), and fine-adjust the screws (b), (c) and (d) so that the largest output is obtained for both channels.

4. REC/PB HEAD AZIMUTH ALIGNMENT ADJUSTMENT

1) Playback a 10 kHz Head Azimus Alignment Tape (TF-106CH) and adjust the screw (d) until the output levels of both channels are at maximum.
2) Record a 10 kHz, −20VU signal from the audio frequency oscillator.
3) Rewind and check for any fluctuation in the output level at playback.
4) After adjustment, paintlock the screws (b), (c) and (d).

NOTES:

1. Be sure to clean the heads prior to head adjustment.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Be sure to demagnetize the heads with a Head Demagnetizer before and after head adjustment.

VIII. AMPLIFIER ADJUSTMENT

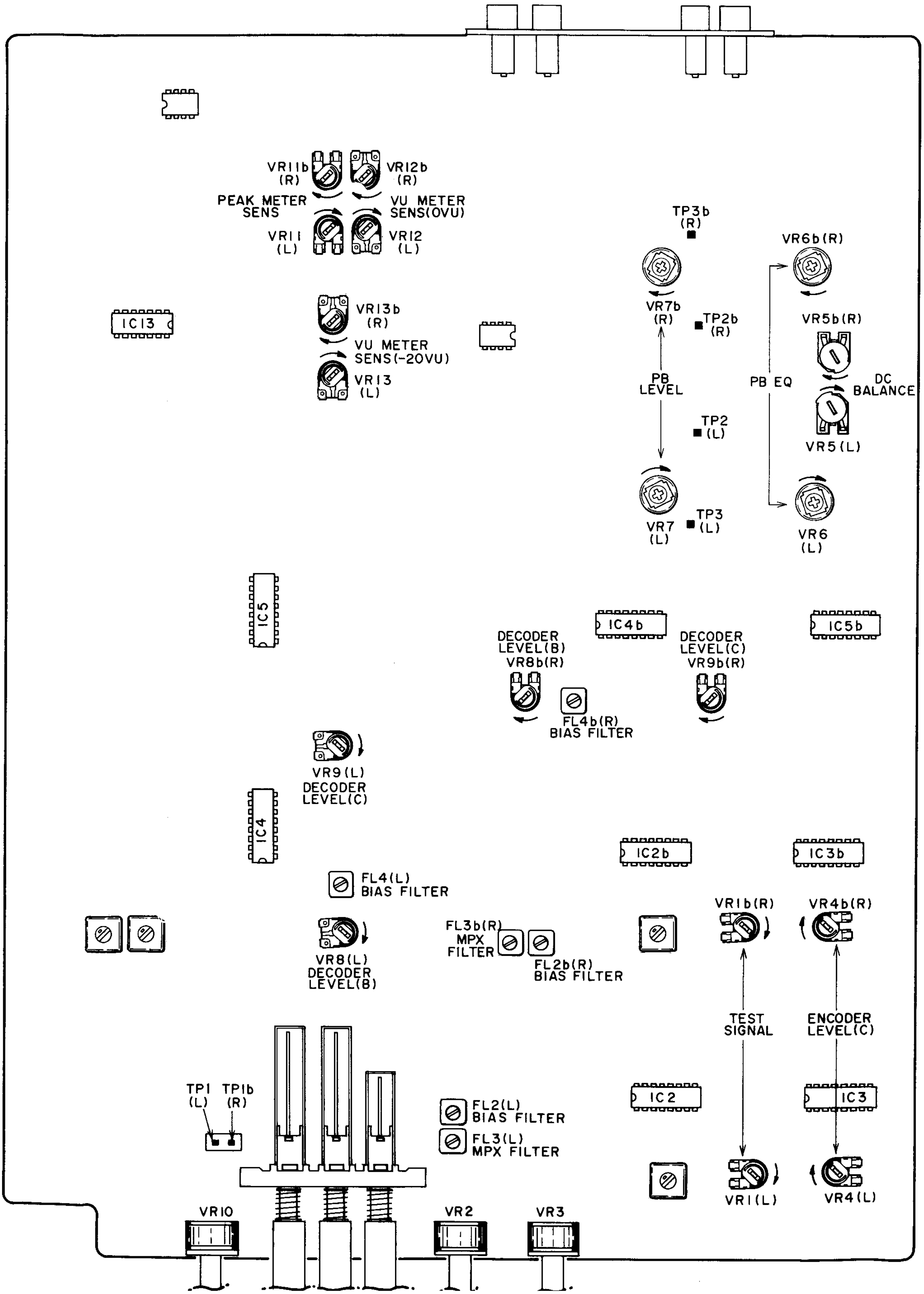

VR11b (R)
VR12b (R)
PEAK METER SENS
VU METER SENS(0VU)
VR11 (L)
VR12 (L)
TP3b (R)
VR6b(R)
IC13
VR13b (R)
VU METER SENS(-20VU)
VR13 (L)
VR7b (R)
TP2b (R)
VR5b(R)
PB LEVEL
PB EQ
DC BALANCE
TP2 (L)
VR5(L)
VR7 (L)
TP3 (L)
VR6 (L)
IC5
IC4b
IC5b
DECODER LEVEL(B)
VR8b(R)
DECODER LEVEL(C)
VR9b(R)
FL4b(R) BIAS FILTER
VR9(L) DECODER LEVEL(C)
IC4
IC2b
IC3b
FL4(L) BIAS FILTER
VR1b(R)
VR4b(R)
FL3b(R) MPX FILTER
VR8(L) DECODER LEVEL(B)
FL2b(R) BIAS FILTER
TEST SIGNAL
ENCODER LEVEL(C)
TP1 (L)
TP1b (R)
IC2
IC3
FL2(L) BIAS FILTER
FL3(L) MPX FILTER
VR1(L)
VR4(L)
VR10
VR2
VR3

Fig. 11 Pre Amp P.C Board

1. PB EQ AMP ADJUSTMENT (Fig. 11)

1) DC Balance

Adjust VR5 so that the voltage of TP2 will be 0 ± 0.2V DC.

2) PB Level

Play back 333 Hz PB level adjustment tape (TF-101CL) and adjust VR7 so that the LINE OUT level will be −5.5 ± 0.2 dBm.

3) PB EQ

Play back 10 kHz PB EQ adjustment tape (TF-106CH) and adjust VR6 so that the LINE OUT level will −22.5 ± 1.5 dBm.

2. METER ADJUSTMENT (Fig. 11)

1) VU Meter
   a. With the monitor SW to SOURCE and the meter SW to VU, input a signal of 1 kHz through LINE IN.
   b. Adjust VR12 so that the +1VU goes out when the LINE OUT level is set to −5.2 dBm.
   c. Adjust VR13 so that the −20VU goes out when the LINE OUT level is set to −27.6 dBm.
   d. Repeat b.
2) Peak Meter
   a. With the meter SW to PEAK, input a signal of 1 kHz from the LINE IN.
   b. Adjust VR11 so that the +9 dB goes out when the LINE OUT level is set to +2.8 dBm.

3. DOLBY ENCODER ADJUSTMENT (Fig. 11)

1) Dolby C-type level adjustment
   a. With the monitor SW to SOURCE, input signal of 400 Hz into the LINE INPUT and adjust the input level so that the level of TP1 will be −2.5 ± 0.1 dBm (580 mV) when Dolby is OFF.
   b. Adjust VR4 so that the level of TP1 will be the same level as a. (−2.5 ± 0.1 dBm) when Dolby C-type is ON.
2) MPX Filter Adjustment
   a. With the monitor SW to SOURCE and MPX filter SW "OFF", input a signal of 19 kHz from LINE IN.
   b. Adjust FL3 so that the LINE OUT level will be at minimum when MPX filter SW is turned ON.
3) BIAS Filter Adjustment
   a. Set a meter tape and set to REC/PLAY (or REC/PLAY → REC/PAUSE).
   b. Adjust FL2 so that the LINE OUT level will be at minimum when the input volume is set to MAX and the monitor SW to SOURCE.
   c. Check in other positions.

4. DOLBY DECODER ADJUSTMENT (Fig. 11)

1) Dolby B-type level adjustment
   a. Set to PLAY mode without inserting a tape.
   b. Input the signal of 400 Hz into TP3 and adjust the input level so that the LINE OUT level will be −2.5 ± 0.1 dBm (580 mV) when Dolby: OFF.
   c. Adjust VR8 so that the LINE OUT level will be the same level as b. (−2.5 ± 0.1 dBm), when Dolby B-type: ON.
2) Dolby C-type level adjustment
   a. Carry out 1)-a, b adjustment.
   b. Adjust VR9 so that the LINE OUT level will be the same level as a. (−2.5 ± 0.1 dBm) when Dolby C-type: ON.
3) Bias Filter Adjustment
   a. Set a metal tape and set to REC/PLAY mode.
   b. Adjust FL4 so that the LINE OUT level will be at minimum when the monitor SW is set to TAPE.
   c. Check in other positions.

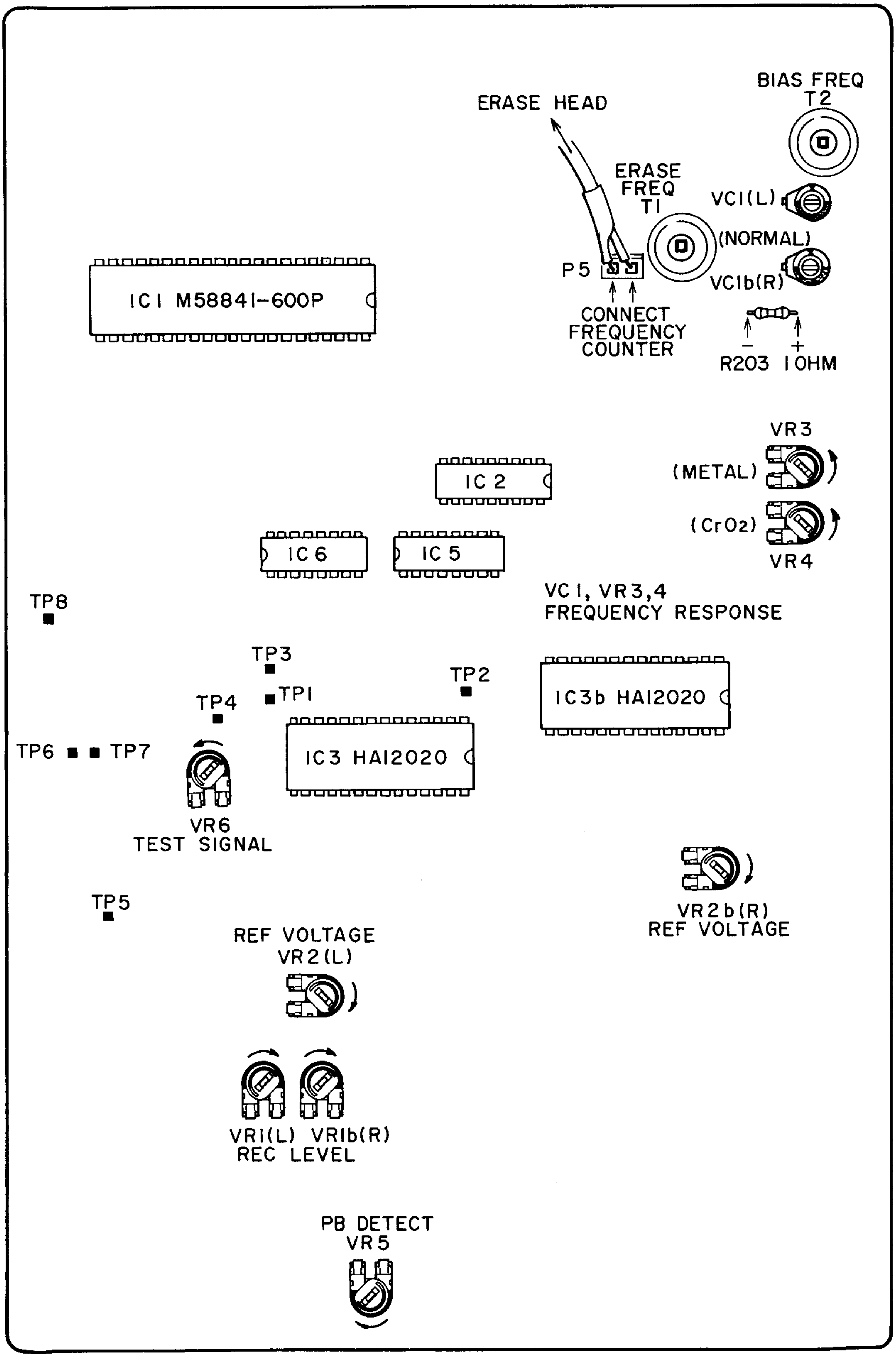

BIAS FREQ
T2
ERASE HEAD
ERASE
FREQ
T1
VC1(L)
(NORMAL)
VC1b(R)
P5
CONNECT
FREQUENCY
COUNTER
R203 1OHM
IC1 M58841-600P
VR3
(METAL)
(CrO2)
VR4
IC 2
IC 6
IC 5
VC1, VR3,4
FREQUENCY RESPONSE
TP8
TP3
TP2
TP1
TP4
IC3b HA12020
TP6
TP7
IC3 HA12020
VR6
TEST SIGNAL
VR2b(R)
REF VOLTAGE
TP5
REF VOLTAGE
VR2(L)
VR1(L) VR1b(R)
REC LEVEL
PB DETECT
VR5

Fig. 12 Tuning P.C Board

5. IC3 (HA12020) REFERENCE VOLTAGE ADJUSTMENT (Fig. 12)

a. Set the mode to REF. (with power ON, REF is achieved)

b. Adjust VR2 (L) so that the voltage to GND of TP1 will be 1.10 ± 0.03V DC.

c. Adjust VR2b (R) so that the voltage to GND of TP2 will be 4.00 ± 0.05V DC (before SERIAL NUMBER 70401-00101), 5.10 ± 0.05V DC (after SERIAL NUMBER 70401-00101).

6. REC BIAS OSC ADJUSTMENT (Fig. 12)

a. Set a metal tape and set to REC/PLAY mode.

b. Set VC1 as shown in Fig. 12.

c. Connect the frequency counter to P5 (tuning PCB) and adjust T1 so that the frequency will be 100 ± 0.2 kHz.

d. Connect a DC voltmeter to both ends of R203 (1 ohm) and adjust T2 so that the voltage will be at minimum.

7. FREQUENCY RESPONSE ADJUSTMENT (Fig. 12)

a. Record and play back 1 kHz/10 kHz, −25.5 dBm using a normal tape and adjust VC1 so that 1 kHz/10 kHz will be 0 ± 0.5 dBm (provided L-R difference is within 0.5 dBm).

b. Record and play back 1 kHz/10 kHz, −25.5 dBm using a CrO_2 tape and adjust VR4 so that 1 kHz/10 kHz will be 0 ± 0.5 dBm.

c. Record and play back 1 kHz/10 kHz, −25.5 dBm using a metal tape and adjust VR3 so that 1 kHz/10 kHz will be 0 ± 0.5 dBm.

8. RECORDING LEVEL ADJUSTMENT (Fig. 12)

Record and play back 1 kHz, −5.5 dBm using a normal tape, and adjust VR1 so that the difference between recording and play back levels will be 0 ± 0.3 dBm.

9. TEST SIGNAL ADJUSTMENT (Fig. 12)

a. In REF mode, with recording volume to MIN. (or input: OFF), connect TP5 and TP8 to GND.

b. Connecting an AC voltmeter (mV meter) to TP4, adjust VR6 so that the AC voltmeter difference when TP6 and TP7 are connected to GND and when they are not connected, will be within 0.5 dBm.

Reference:

When both TP6 and TP7 are open .....
TEST SIGNAL: 1 kHz
When TP6 = open, TP7 = GND .....
TEST SIGNAL: 7 kHz
When both TP6 and TP7 are to GND .....
TEST SIGNAL: 13 kHz

c. With the monitor SW to SOURCE, adjust VR1 (Fig. 11 Pre Amp PCB) so that the LINE OUT level will be −25.5 ± 0.2 dBm.

10. LEVEL ADJUSTMENT OF PLAYBACK OUTPUT LEVEL DETECTION CIRCUIT

Adjust VR5 so that the voltage to GND of TP3 will be 4.0 ± 0.1V DC (before SERIAL NUMBER 70401-00101), 5.1 ± 0.1V DC (after SERIAL NUMBER 70401-00101) under 9-C conditions.

NOTES:

1. Using a digital voltmeter for the measurement of DC voltage and an AC voltmeter (mV meter) for AC voltage measurement, the input impedance should be 10M ohm or more.
2. Output level control should be at maximum.
3. Use the following cassette measuring tapes:

Normal tpae	: Maxell	UD	C-60
CrO_2 tape	: TDK	SA	C-60
Metal tape	: TDK	MA	C-60

IX. DC RESISTANCE OF HEADS

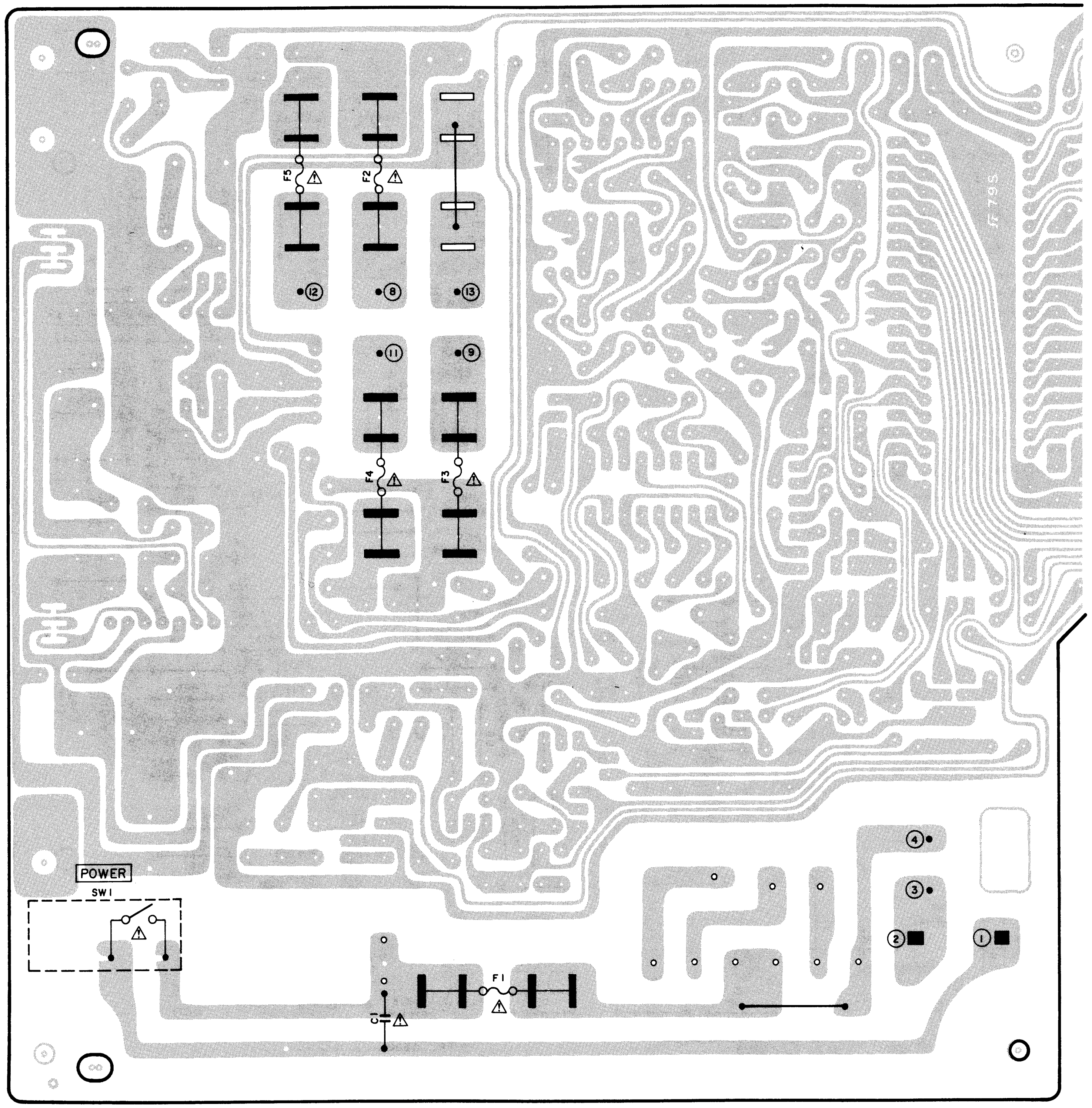
Description	Name	DC Resistance
REC/PB Head	PR4-5	PB: 340 ohms ± 10% REC: 320 ohms ± 10%
Erase Head	E-3621-PR	2.5 ohms ± 15%

X. CLASSIFICATION OF VARIOUS P.C BOARDS

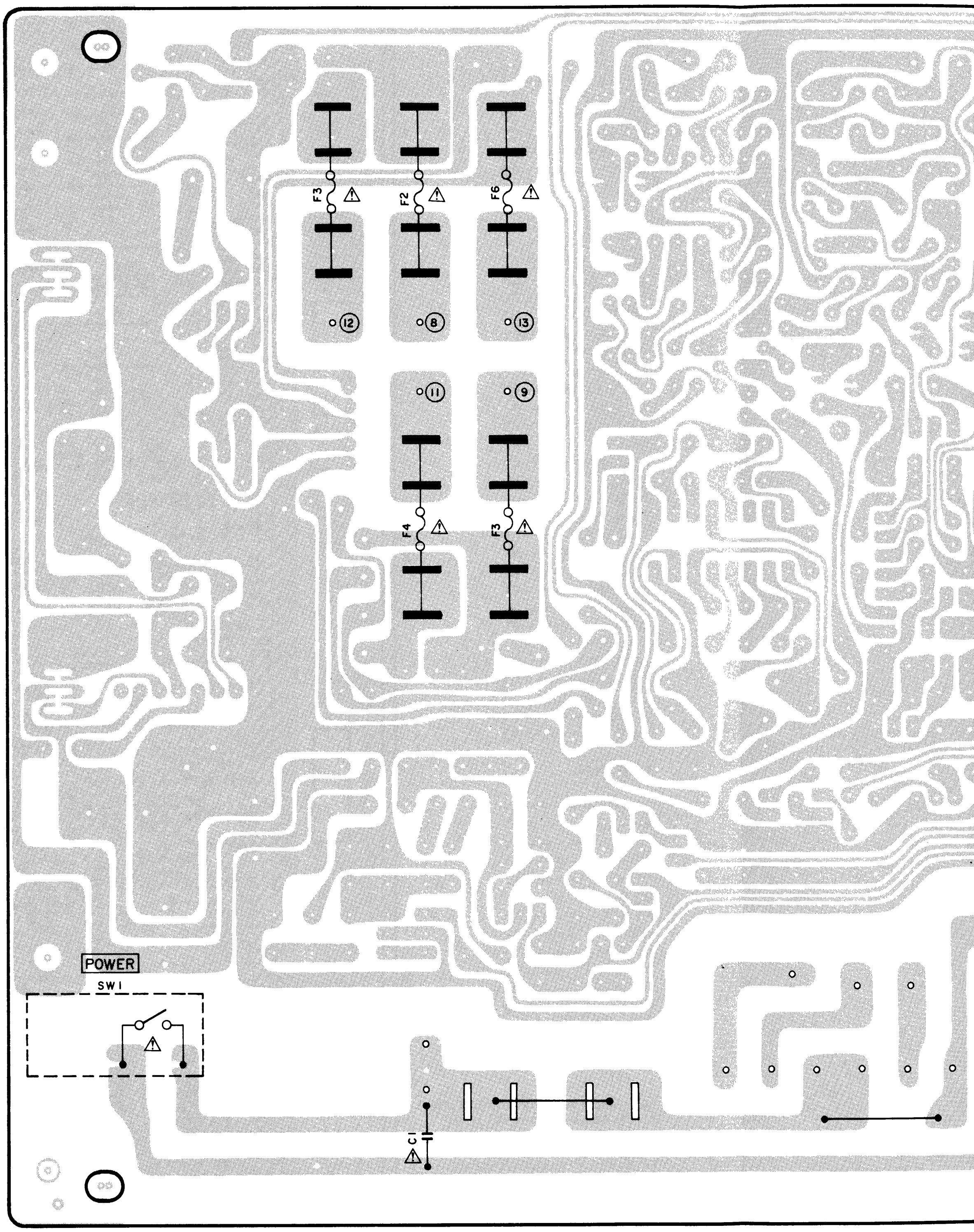
1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board Title	P.C Board Number
Pre Amp P.C Board	T2032A501A
Phone Jack P.C Board	T2032A501B
Tuning P.C Board	T2032B5030
Syscon P.C Board	T2032B502A
Switch P.C Board	T2032B502B
TR P.C Board (A)	T2032B502C
TR P.C Board (B)	T2032B502D
Meter P.C Board	T2032B5040
Motor P.C Board	M3103C726A
Potention P.C Board	M3103C726B
FG P.C Board	M3103C7130
Filter P.C Board	T2029D5040
Detector P.C Board	T2029D5030
Micro SW P.C Board	T2029D5020

B,S MODEL


F5
F2
F4
F3
F1
C1
⑫
⑧
⑬
⑪
⑨
④
③
②
①
POWER
SW1

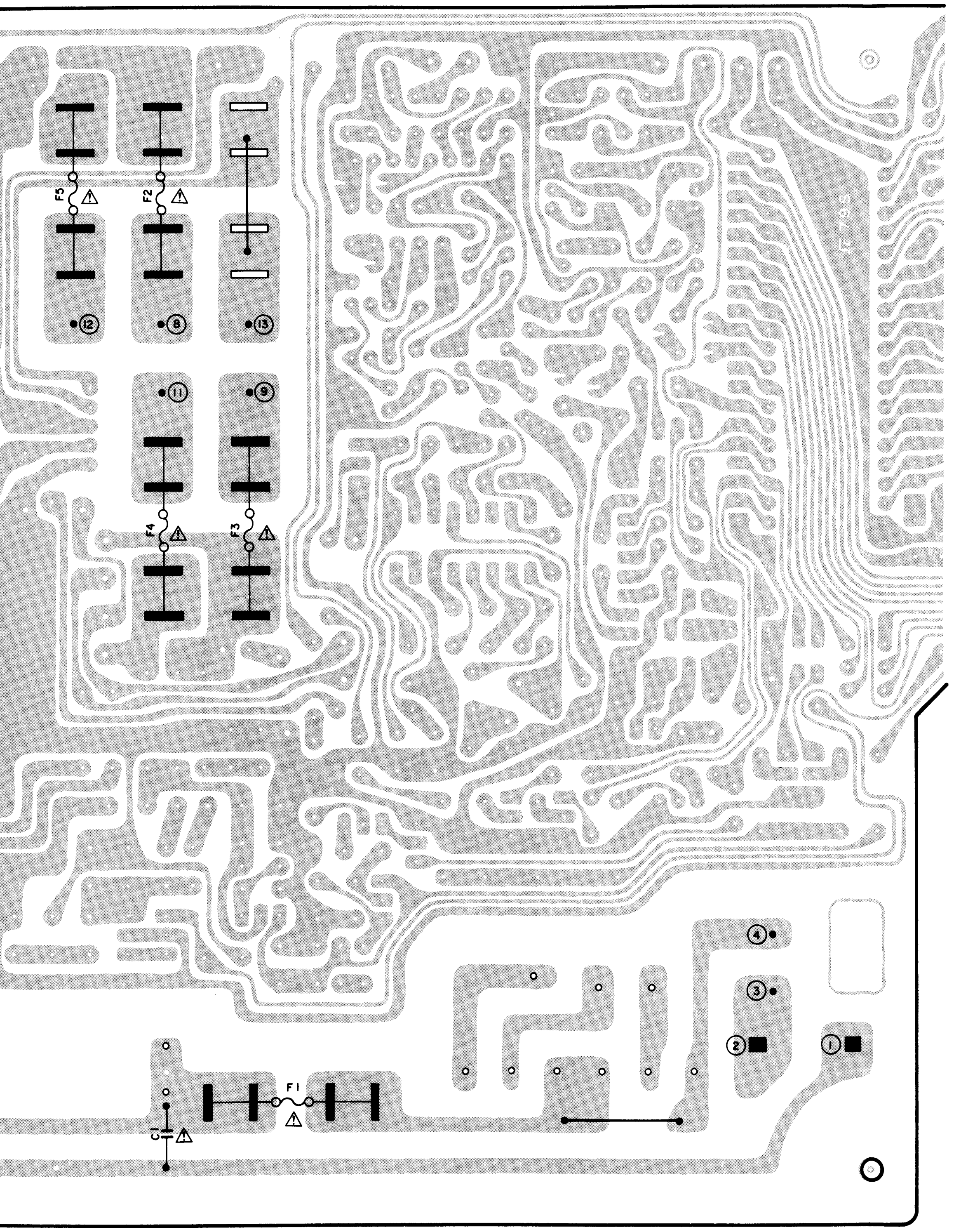
J,C,A,E,V MODEL


F3
F2
F6
F4
F3
C1
⑫
⑧
⑬
⑪
⑨
POWER
SW1

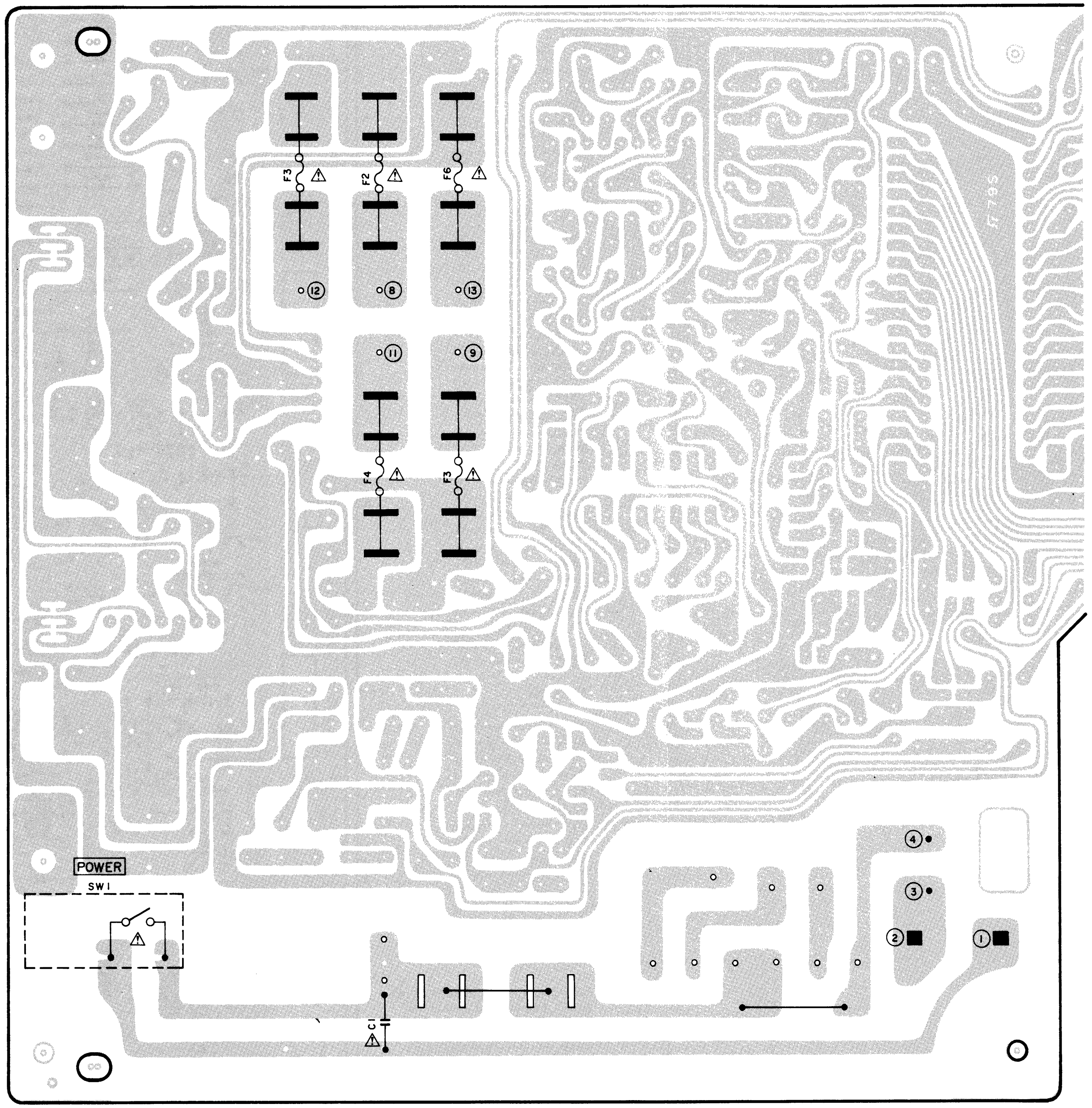
WARNING: ⚠INDICATES SAFETY CRITIC
REPLACE SAFETY CRITICAL
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COM
MAINTENIR LE DEGRE DE SE
CONPOSANTS DONT LE FONC
QUE PAR DES PIECES RECO

B,S MODEL


F5
F2
⑫
⑧
⑬
⑪
⑨
F4
F3
④
③
②
①
F1
C1

J,C,A,E,V MODEL


F3
F2
F6
⑫
⑧
⑬
⑪
⑨
F4
F3
④
③
②
①
POWER
SW1
C1

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

3) TUNING P.C BOARD T2032B5030 (2ED)

LOCATION OF COMPONENTS

IC

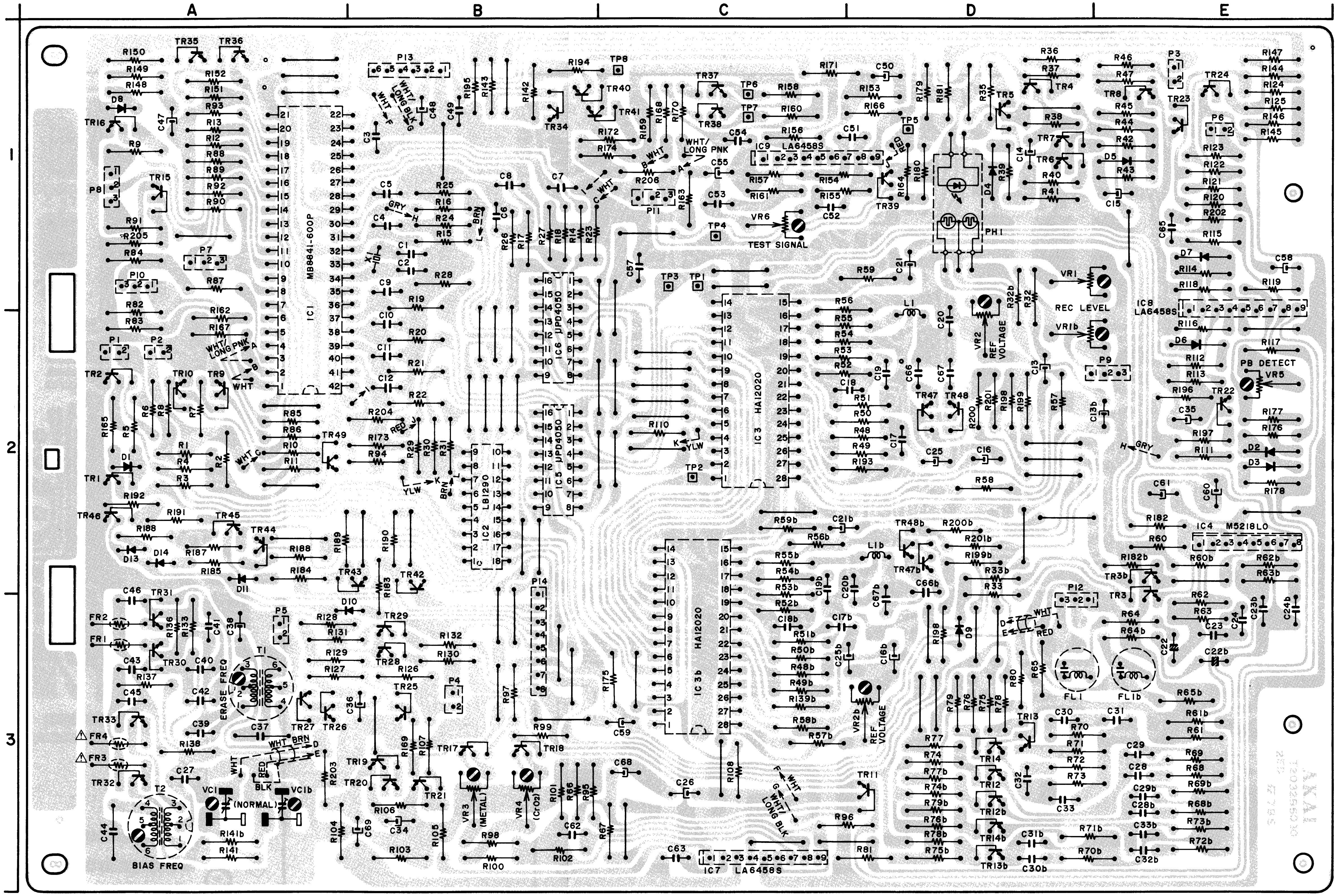
IC1 ———————— A1
IC2 ———————— B2
IC3 ———————— C2
IC3b ———————— C3
IC4 ———————— E2
IC5, 6 ——————— B2

TR

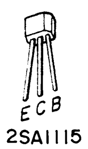
TR1, 2 —————— A2
TR3 ——————— E3
TR3b ——————— E2
TR4 to 7 —————— D1
TR8 ——————— E1
TR9, 10 —————— A2
TR11 to 14,
12b to 14b ——— D3
TR15, 16 ————— A1
TR17 to 21 ———— B3
TR22 —————— E2
TR23, 24 ————— E1
TR25 ——————— B3
TR26, 27 ————— A3
TR28, 29 ————— B3
TR30 to 33 ———— A3
TR34 —————— B1
TR35, 36 ————— A1
TR37, 38 ————— C1
TR39 ——————— D1
TR40 ——————— B1
TR41 ——————— C1
TR42, 43 ————— B2
TR44 to 46 ———— A2
TR47, 47b, 48,
48b —————— D2
TR49 ——————— A2

TERMINAL

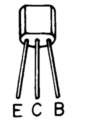
P1, 2 ——————— A2
P3 ———————— E1
P4 ———————— B3
P5 ———————— A3
P6 ———————— E1
P7, 8 ——————— A1
P9 ———————— E2
P10 ———————— A1
P11 ———————— C1
P12 ———————— D3
P13 ———————— B1
P14 ———————— B3


A
B
C
D
E
1
2
3
IC1 MB8841-600P
IC2 LB1290
IC3 HA12020
IC3b HA12020
IC4 M5218L0
IC5 μPD4050
IC6 μPD4050
IC7 LA6458S
IC8 LA6458S
IC9 LA6458S
TEST SIGNAL
REC LEVEL
PB DETECT
REF VOLTAGE
ERASE FREQ
BIAS FREQ
(METAL)
(CrO2)
(NORMAL)
PH1
FL1
FL1b
T1
T2

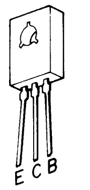
TR1,2,4to10,12 to18,20to26,28,29
34to41,46to49--2SC2603(F,G)
TR 3 ———— 2SD1012V(F,G)
TR11 ———— 2SC1061(B,C)
TR19,27 ——— 2SD612K(E,F)
TR30 to 33——— 2SC2274K(F)
TR42 to 45——— 2SA1115(E,F)



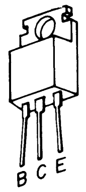
2SA1115
2SC2603
2SD1012



2SC2274



2SD612



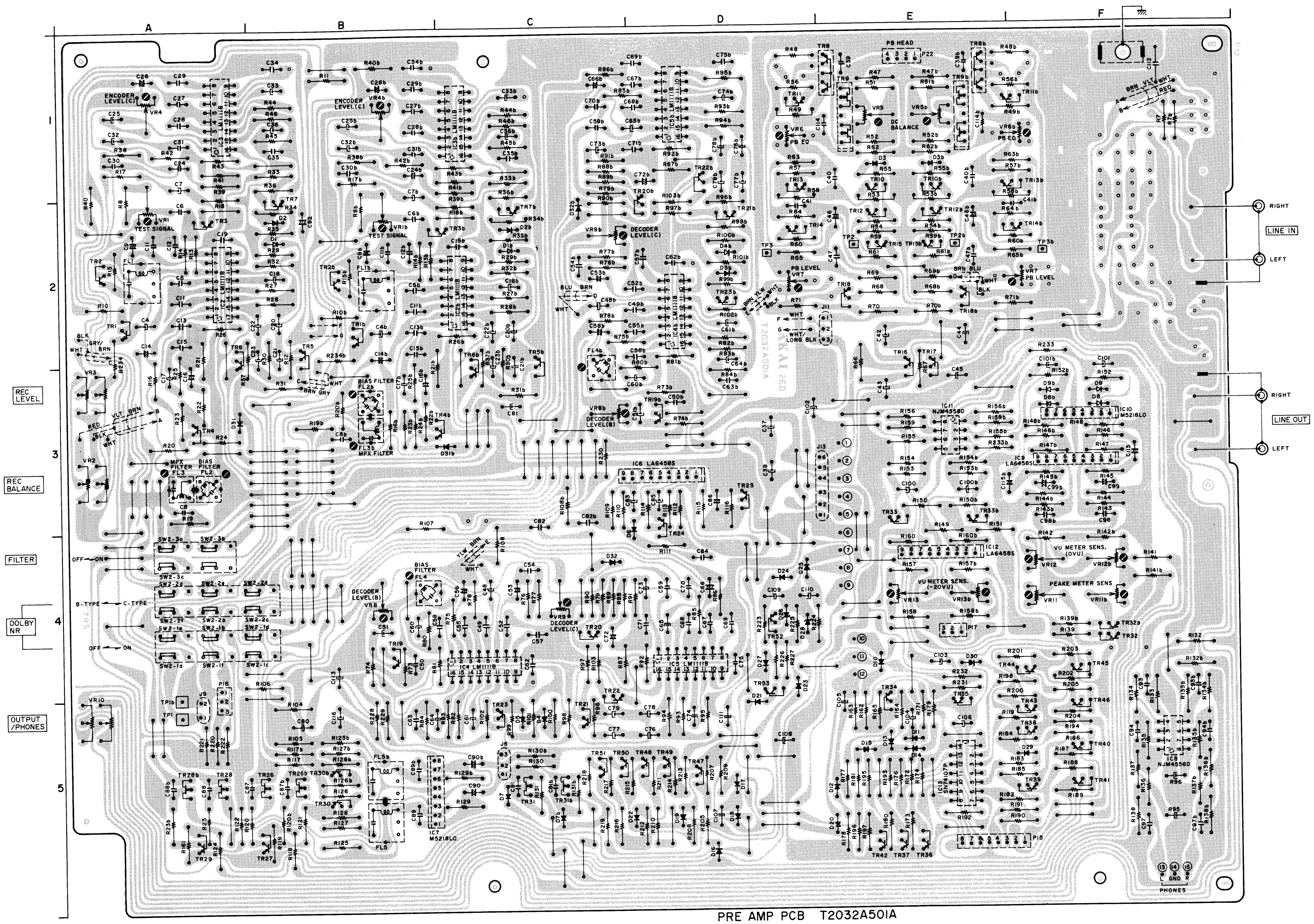
2SC1061

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

2. COMPOSITION OF VARIOUS P.C BOARDS

1) PRE AMP P.C BOARD T2032A501(2ED) and PHONE JACK P.C BOARD T2032A501B


A
B
C
D
E
F
1
2
3
4
5
REC LEVEL
REC BALANCE
FILTER
DOLBY NR
OUTPUT /PHONES
RIGHT
LINE IN
LEFT
RIGHT
LINE OUT
LEFT
PHONES
GND
ENCODER LEVEL(C)
TEST SIGNAL
MPX FILTER
BIAS FILTER
DECODER LEVEL(B)
DECODER LEVEL(C)
PB HEAD
DC BALANCE
PB EQ
PB LEVEL
VU METER SENS. (0VU)
VU METER SENS. (-20VU)
PEAKE METER SENS.
OFF — ON
B-TYPE — C-TYPE
T2032A501A

PRE AMP PCB T2032A501A

LOCATION OF COMPONENTS

IC

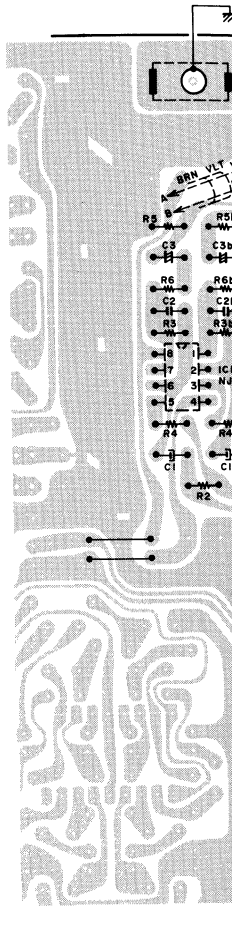
IC2 ———————A2
IC2b ———————C2
IC3 ———————A1
IC3b ———————C1
IC4 ———————C4
IC4b ———————D2
IC5 ————————D4
IC5b ———————D1
IC6 ————————D3
IC7 ————————B5
IC8 ———————F5
IC9, 10 ——————F3
IC11 ———————E3
IC12 ———————E4
IC13 ———————E5

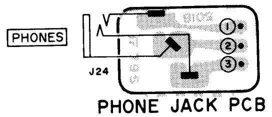
TR

TR1 to 3 ————A2
TR1b to 3b ———B2
TR4 ———————A3
TR4b ——————B3
TR5 ———————B2
TR6 ———————A2
TR7 ———————B1
TR5b to 7b ———C2
TR8 to 10,
8b to 10b ———E1
TR11 ———————D1
TR11b ———————E1
TR12, 12b ————E2
TR13 ———————D1
TR13b ——————E1
TR14 ———————D2
TR14b ——————E2
TR15, 15b ———E2
TR16, 17 ————E3
TR18, 18b ———E2
TR19 ——————B4
TR19b ——————D3
TR20 ——————C4
TR21 ——————C5
TR20b, 21b ———D2
TR22 ——————C4
TR22b ——————D1
TR23 ——————C5
TR23b ——————D2
TR24, 25 ————D3
TR26, 26b, 27 ——B5
TR28, 28b, 29 ——A4
TR30, 30b ———B5
TR31, 31b ———C5
TR32, 32b ———F4
TR33, 33b ———E3
TR34 to 37 ———E5
TR38, 39 ————F5
TR40, 41 ————F5
TR42 ——————E5
TR43 ——————F5
TR44,45 —————F4
TR46 ——————F5
TR47 to 49 ———D5
TR50, 51 ————C5
TR52, 53 ————D4

TERMINAL

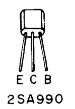
① to ⑤ ——————E3
⑥ to ⑫ ——————E4
⑬ to ⑮ ——————F5
P15 ———————E5
P16 ———————A4
P17 ———————E4
J6 ————————C5
J9 ————————A4
J11 ———————D1
J13 ———————D3


R5
C3
R6
R3
R4
C1
R2
BRN
VLT

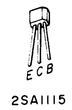

PHONES
J24
①
②
③

PHONE JACK PCB
T2032A501B

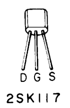
TR1 to 7, 19 to 25, 27, 29, 30, 32
34 to 39, 42 to 44, 47 to 50, 52
————2SC2603(E,F)
TR8 ——————2SA995(E,F)
TR9 ——————2SK270(GR, BL)
TR10, 12 ————2SC1843(E, F)
TR11 ——————2SA990(E,F)
TR13, 14, 18 ——2SC2320(E,F)
TR15 ——————2SA999(E,F)
TR16 ——————2SD1012-V(F,G)
TR17 ——————2SB808-V(F,G)
TR26, 28 ———2SK170(BL,V)
TR31 ——————2SK117(GR,BL)
TR33, 40, 41, 45
46, 51, 53 ——2SA1115(E,F)



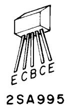
2SA990
2SA999
2SC1843
2SC2320



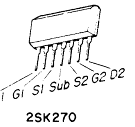
2SA1115
2SB808
2SC2603
2SD1012



2SK117



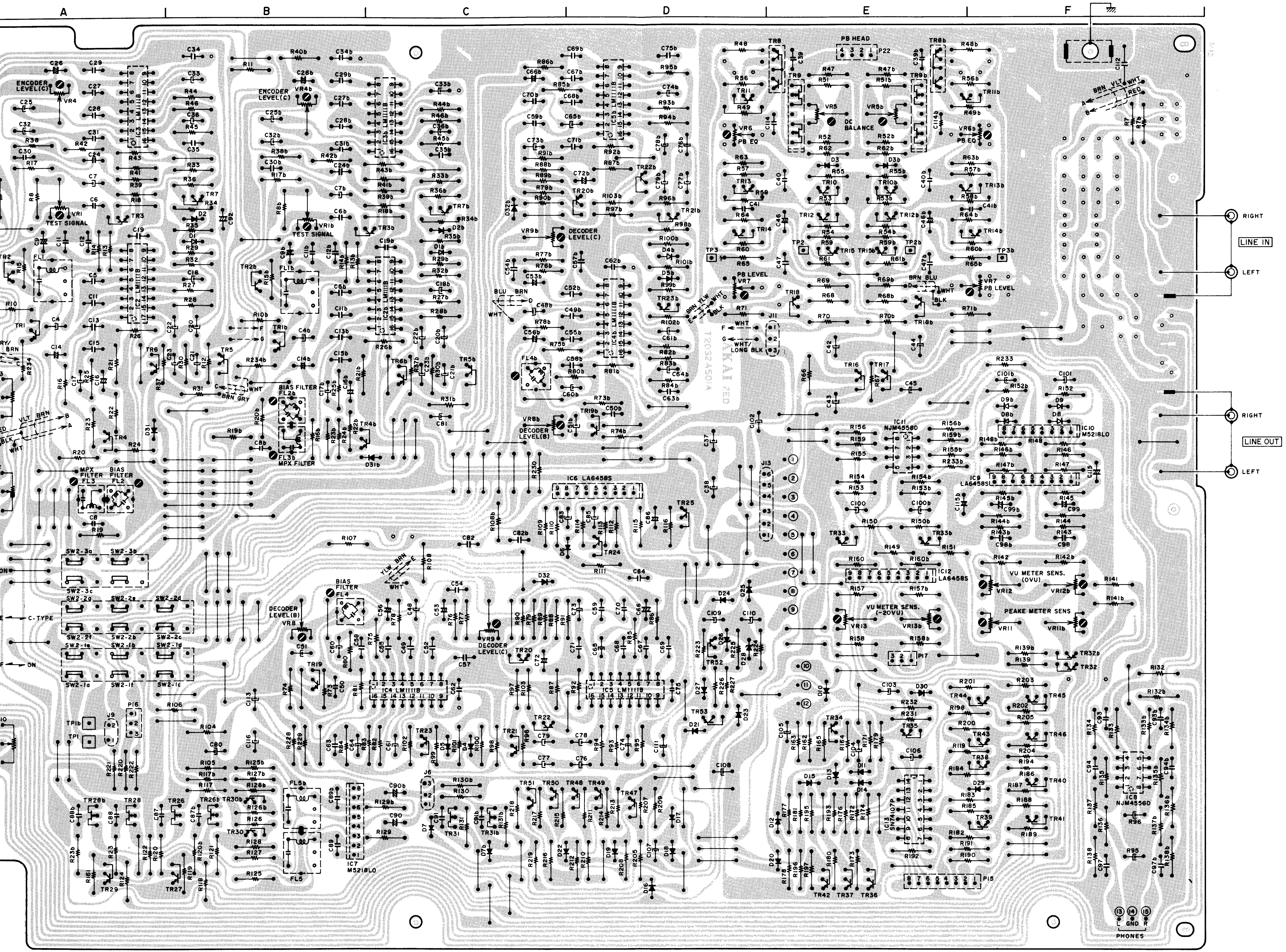
2SA995


D1 G1 S1 Sub S2 G2 D2

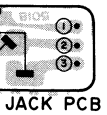
2SK270

ARIOUS P.C BOARDS

T2032A501(2ED) and PHONE JACK P.C BOARD T2032A501B

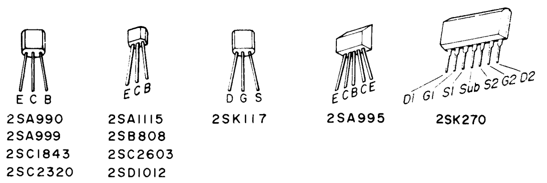

A
B
C
D
E
F
ENCODER LEVEL(C)
TEST SIGNAL
BIAS FILTER
MPX FILTER
DECODER LEVEL(C)
DECODER LEVEL(B)
PB HEAD
PB EQ
DC BALANCE
PB LEVEL
VU METER SENS. (0VU)
VU METER SENS. (-20VU)
PEAKE METER SENS
C-TYPE
ON
IC6 LA6458S
IC11 NJM4556D
IC9 LA6458S
IC10 M5218L0
IC12 LA6458S
IC7 M5218L0
IC8 NJM4556D
AKAI T2032A501A 2ED
GND
PHONES
RIGHT
LINE IN
LEFT
RIGHT
LINE OUT
LEFT

PRE AMP PCB T2032A501A



JACK PCB
A501B

TR1 to 7, 19 to 25, 27, 29, 30, 32
34 to 39, 42 to 44, 47 to 50, 52
---- 2SC2603(E,F)
TR8 ------ 2SA995(E,F)
TR9 ------ 2SK270(GR, BL)
TR10, 12 ----- 2SC1843(E, F)
TR11 ------ 2SA990(E,F)
TR13, 14, 18 -- 2SC2320(E,F)
TR15 ------ 2SA999(E,F)
TR16 ------ 2SD1012-V(F,G)
TR17 ------ 2SB808-V(F,G)
TR26, 28 --- 2SK170(BL,V)
TR31 ------ 2SK117(GR,BL)
TR33, 40, 41, 45
46, 51, 53 -- 2SA1115(E,F)


E C B
2SA990
2SA999
2SC1843
2SC2320
E C B
2SA1115
2SB808
2SC2603
2SD1012
D G S
2SK117
E C B C E
2SA995
D1 G1 S1 Sub S2 G2 D2
2SK270

LOCATION OF COMPONENTS

IC

IC2 ------- A2
IC2b ------- C2
IC3 ------- A1
IC3b ------- C1
IC4 ------- C4
IC4b ------- D2
IC5 -------- D4
IC5b ------- D1
IC6 -------- D3
IC7 -------- B5
IC8 ------- F5
IC9, 10 ------ F3
IC11 ------- E3
IC12 ------- E4
IC13 ------- E5

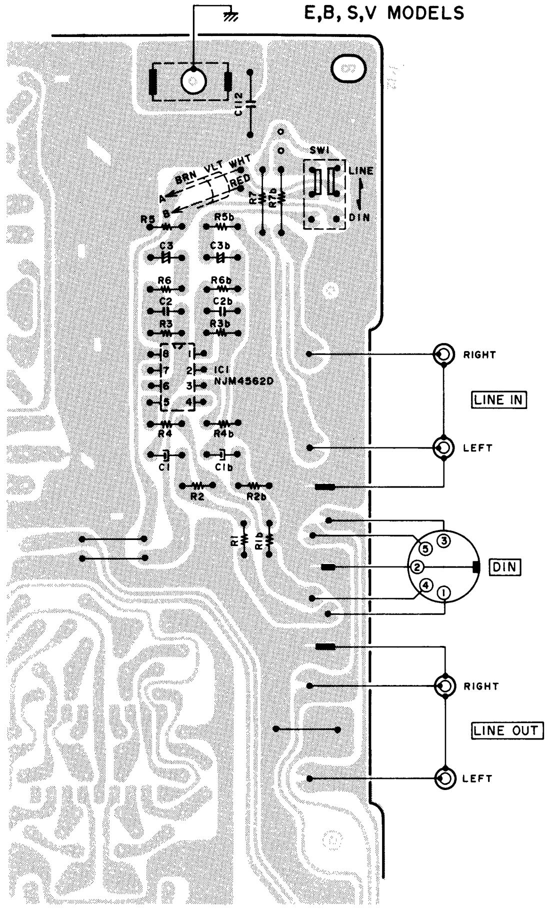
TR

TR1 to 3 ---- A2
TR1b to 3b --- B2
TR4 ------- A3
TR4b ------ B3
TR5 ------- B2
TR6 ------- A2
TR7 ------- B1
TR5b to 7b --- C2
TR8 to 10,
8b to 10b --- E1
TR11 ------- D1
TR11b ------- E1
TR12, 12b ---- E2
TR13 ------- D1
TR13b ------ E1
TR14 ------- D2
TR14b ------ E2
TR15, 15b --- E2
TR16, 17 ---- E3
TR18, 18b --- E2
TR19 ------ B4
TR19b ------ D3
TR20 ------ C4
TR21 ------ C5
TR20b, 21b --- D2
TR22 ------ C4
TR22b ------ D1
TR23 ------ C5
TR23b ------ D2
TR24, 25 ---- D3
TR26, 26b, 27 -- B5
TR28, 28b, 29 -- A4
TR30, 30b --- B5
TR31, 31b --- C5
TR32, 32b --- F4
TR33, 33b --- E3
TR34 to 37 --- E5
TR38, 39 ---- F5
TR40, 41 ---- F5
TR42 ------ E5
TR43 ------ F5
TR44,45 ---- F4
TR46 ------ F5
TR47 to 49 --- D5
TR50, 51 ---- C5
TR52, 53 ---- D4

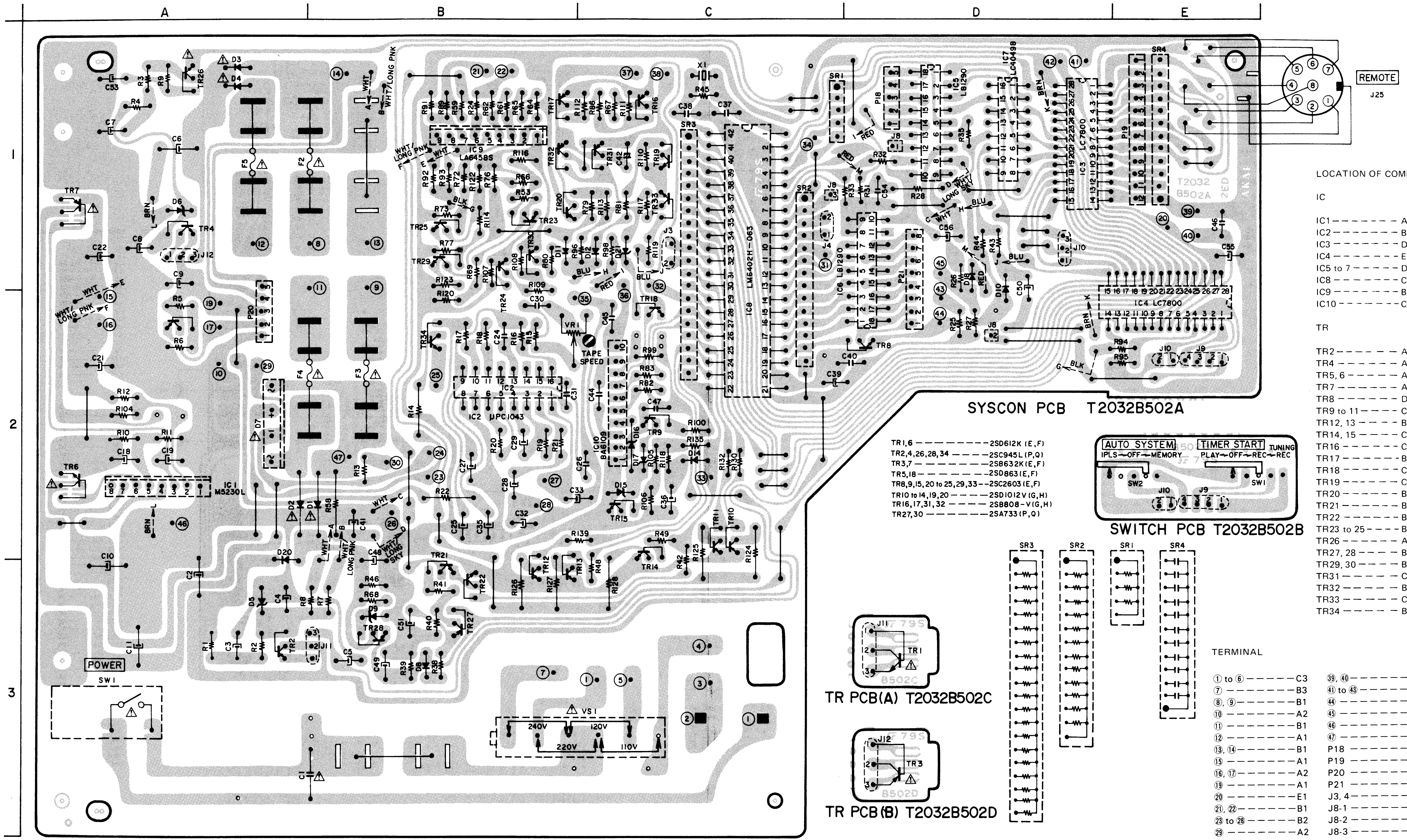
TERMINAL

① to ⑤ ------ E3
⑥ to ⑫ ------ E4
⑬ to ⑮ ------ F5
P15 ------- E5
P16 ------- A4
P17 ------- E4
J6 -------- C5
J9 -------- A4
J11 ------- D1
J13 ------- D3

E,B,S,V MODELS


SW1
LINE
DIN
IC1 NJM4562D
RIGHT
LINE IN
LEFT
DIN
RIGHT
LINE OUT
LEFT

2) SYSCON P.C BOARD T2032B502A (2ED), SWITCH P.C BOARD T2032B502B, TR P.C BOARD (A) T2032B502C and TR P.C BOARD (B) T2032B502D



A
B
C
D
E
1
2
3
SYSCON PCB T2032B502A
SWITCH PCB T2032B502B
TR PCB(A) T2032B502C
TR PCB(B) T2032B502D
REMOTE
J25
AUTO SYSTEM
IPLS—OFF—MEMORY
TIMER START
PLAY—OFF—REC—REC
TUNING
SW1
SW2
J9
J10
J11
J12
TR1
TR3
SR1
SR2
SR3
SR4
POWER
VS1
240V
220V
120V
110V
TAPE SPEED
VR1
IC1 M5230L
IC2 μPC1043
IC3 LC7800
IC4 LC7800
IC5 LB1290
IC6 LB1290
IC7 LC4049B
IC8 LM6402H-063
IC9 LA6458S
IC10 BA6109
X1
F2
F3
F4
F5

TR1,6 ---------- 2SD612K (E,F)
TR2,4,26,28,34 ----- 2SC945L (P,Q)
TR3,7 ---------- 2SB632K (E,F)
TR5,18 ---------- 2SD863 (E,F)
TR8,9,15,20 to 25,29,33 -- 2SC2603 (E,F)
TR10 to 14,19,20 ------ 2SD1012V (G,H)
TR16,17,31,32 ----- 2SB808-V (G,H)
TR27,30 ---------- 2SA733 (P,Q)

LOCATION OF COMPONENTS

IC

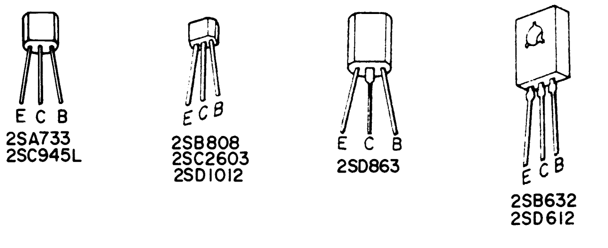
IC1 -------- A2
IC2 -------- B2
IC3 -------- D1
IC4 -------- E1
IC5 to 7 ------ D1
IC8 -------- C1
IC9 -------- B1
IC10 -------- C2

TR

TR2 ------- A3
TR4 ------- A1
TR5, 6 ------ A2
TR7 ------- A1
TR8 ------- D2
TR9 to 11 ----- C2
TR12, 13 ----- B2
TR14, 15 ----- C2
TR16 ------- C1
TR17 ------- B1
TR18 ------- C2
TR19 ------- C1
TR20 ------- B1
TR21 ------- B2
TR22 ------- B3
TR23 to 25 ---- B1
TR26 ------- A1
TR27, 28 ----- B3
TR29, 30 ----- B1
TR31 ------ C1
TR32 ------ B1
TR33 ------ C1
TR34 ------ B2

TERMINAL

① to ⑥ ------- C3
⑦ --------- B3
⑧, ⑨ -------- B1
⑩ --------- A2
⑪ --------- B1
⑫ --------- A1
⑬, ⑭ -------- B1
⑮ --------- A1
⑯, ⑰ -------- A2
⑲ --------- A1
⑳ --------- E1
㉑, ㉒ -------- B1
㉓ to ㉘ ------- B2
㉙ --------- A2
㉚ --------- B2
㉛, ㉜ -------- C1
㉝ --------- C2
㉞ to ㊳ ------- C1
㊴, ㊵ -------- E1
㊶ to ㊸ ------- D1
㊹ --------- D2
㊺ --------- D1
㊻ --------- A2
㊼ --------- B2
P18 -------- D1
P19 -------- E1
P20 -------- A2
P21 -------- D1
J3, 4 -------- C1
J8-1 -------- D1
J8-2 -------- D2
J8-3 -------- C1
J9, 10 ------- E2
J10 -------- D1
J11 -------- B3
J12 -------- A1

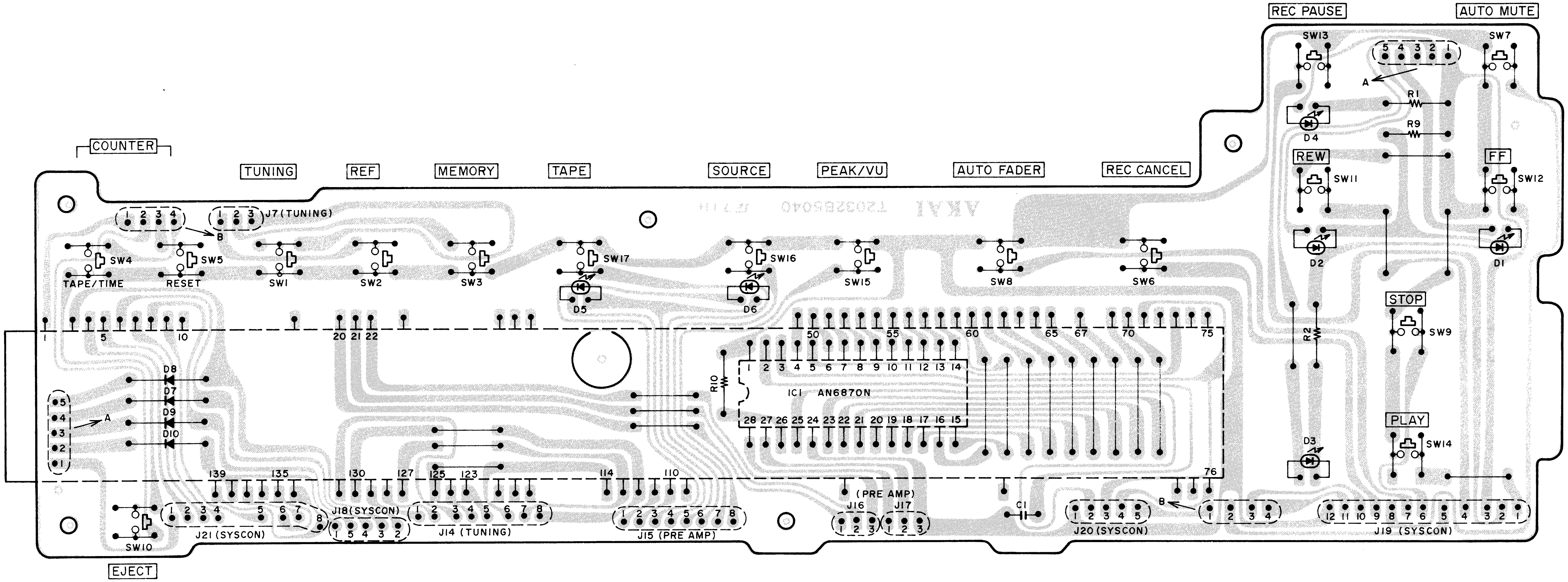


E C B
2SA733
2SC945L
E C B
2SB808
2SC2603
2SD1012
E C B
2SD863
E C B
2SB632
2SD612

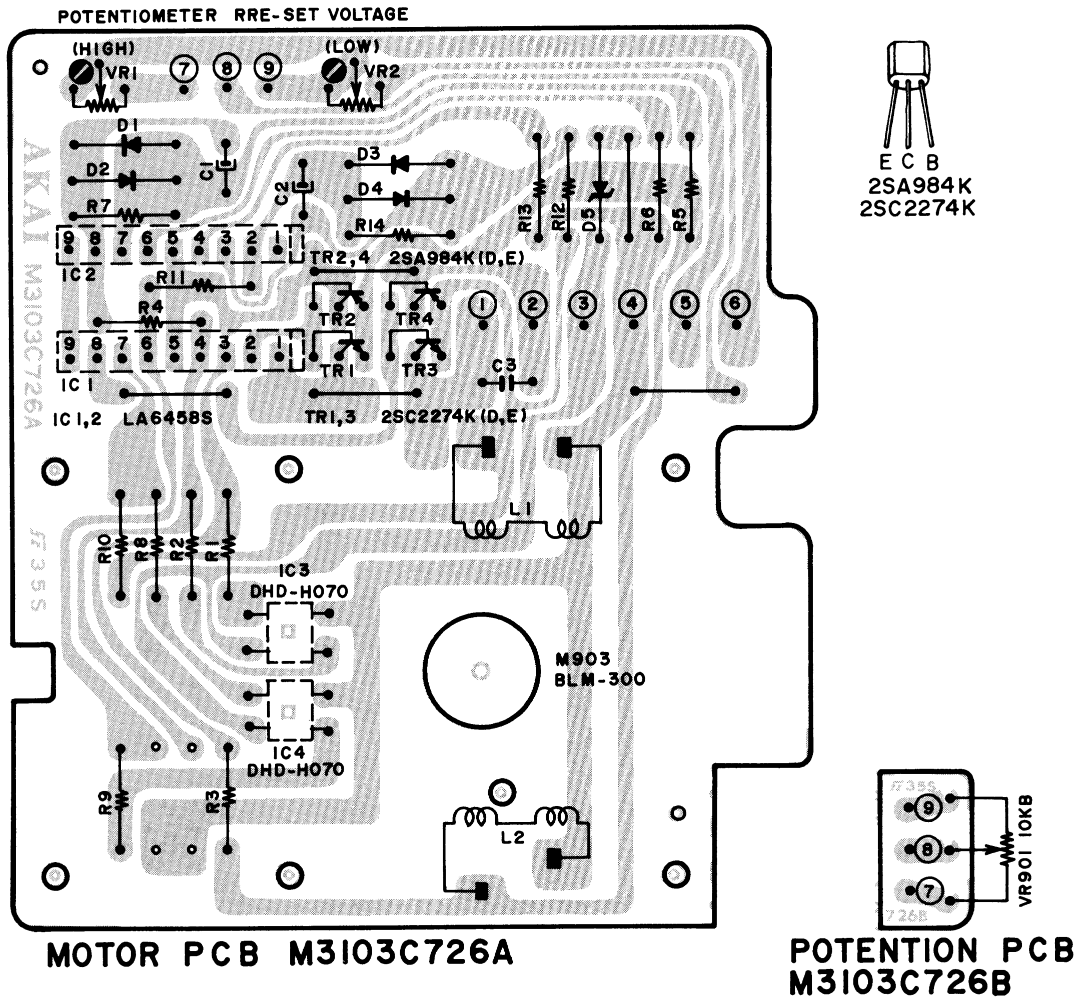
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

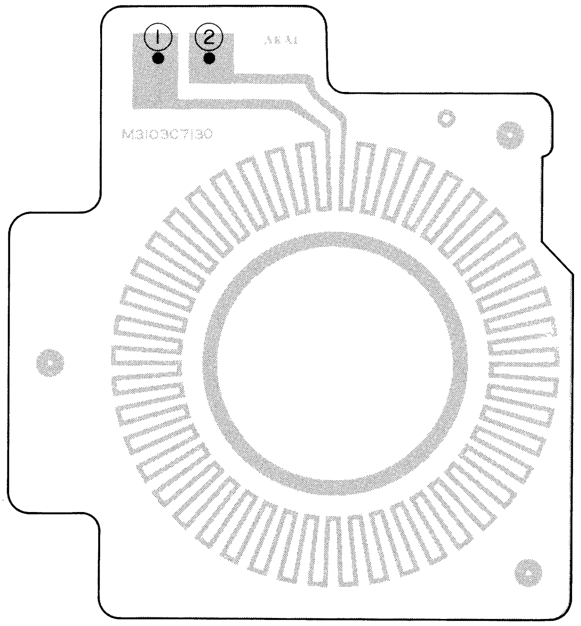
4) METER P.C BOARD T2032B5040


REC PAUSE
AUTO MUTE
SW13
SW7
A
R1
R9
D4
REW
FF
SW11
SW12
D2
D1
COUNTER
TUNING
REF
MEMORY
TAPE
SOURCE
PEAK/VU
AUTO FADER
REC CANCEL
J7 (TUNING)
B
SW4
SW5
TAPE/TIME
RESET
SW1
SW2
SW3
SW17
D5
SW16
D6
SW15
SW8
SW6
STOP
SW9
R2
PLAY
SW14
D3
D8
D7
D9
D10
A
R10
IC1 AN6870N
C1
J21 (SYSCON)
J18 (SYSCON)
J14 (TUNING)
J15 (PRE AMP)
(PRE AMP)
J16
J17
J20 (SYSCON)
J19 (SYSCON)
SW10
EJECT

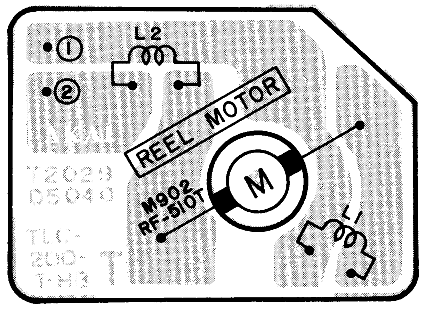
5) MOTOR P.C BOARD M3103C726A and POTENTION P.C BOARD M3103C726B


POTENTIOMETER RRE-SET VOLTAGE
(HIGH)
VR1
(LOW)
VR2
⑦ ⑧ ⑨
D1
D2
C1
C2
D3
D4
R7
R14
R13
R12
D5
R6
R5
IC2
R11
R4
TR2,4 2SA984K(D,E)
TR2
TR4
TR1
TR3
① ② ③ ④ ⑤ ⑥
IC1
C3
IC1,2 LA6458S
TR1,3 2SC2274K(D,E)
AKAI M3103C726A
L1
R10
R8
R2
R1
IC3
DHD-H070
IC4
DHD-H070
M903
BLM-300
R9
R3
L2
E C B
2SA984K
2SC2274K
VR901 10KB
MOTOR PCB M3103C726A
POTENTION PCB
M3103C726B

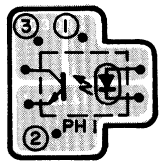
6) FG P.C BOARD M3103C7130


① ②
AKAI
M3103C7130

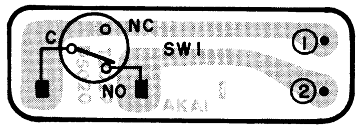
7) FILTER P.C BOARD T2029D5040


①
②
L2
AKAI
REEL MOTOR
T2029
D5040
M902
RF-510T
M
L1
TLC-
200-
T-HB

8) DETECTOR P.C BOARD T2029D5030



9) MICRO SW P.C BOARD T2029D5020


C
NC
NO
SW1
AKAI
①
②

MEMO

MEMO

MEMO

MEMO

SECTION 5

PARTS LIST

TABLE OF CONTENTS

I. MODEL GX-F31

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2. MOTOR BLOCK 5- 6
3. PRE AMP P.C BOARD BLOCK 5- 8
4. SYS. CON. P.C BOARD BLOCK 5- 9
5. METER/OPERATE P.C BOARD BLOCK 5- 9
6. MOTOR P.C BOARD BLOCK 5- 9
7. ASSEMBLY BLOCK 5-10
8. FINAL ASSEMBLY BLOCK 5-12

II. MODEL GX-F51

RECOMMENDED SPARE PARTS 5-13
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2. MOTOR BLOCK 5-16
3. PRE AMP P.C BOARD BLOCK 5-18
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III. MODEL GX-F71

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1. MECHA BLOCK 5-24
2. MOTOR BLOCK 5-26
3. PRE AMP P.C BOARD BLOCK 5-28
4. SYS. CON. P.C BOARD BLOCK 5-29
5. TUNING P.C BOARD BLOCK 5-29
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2. MODEL GX-F51 5-34
3. MODEL GX-F71 5-35

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

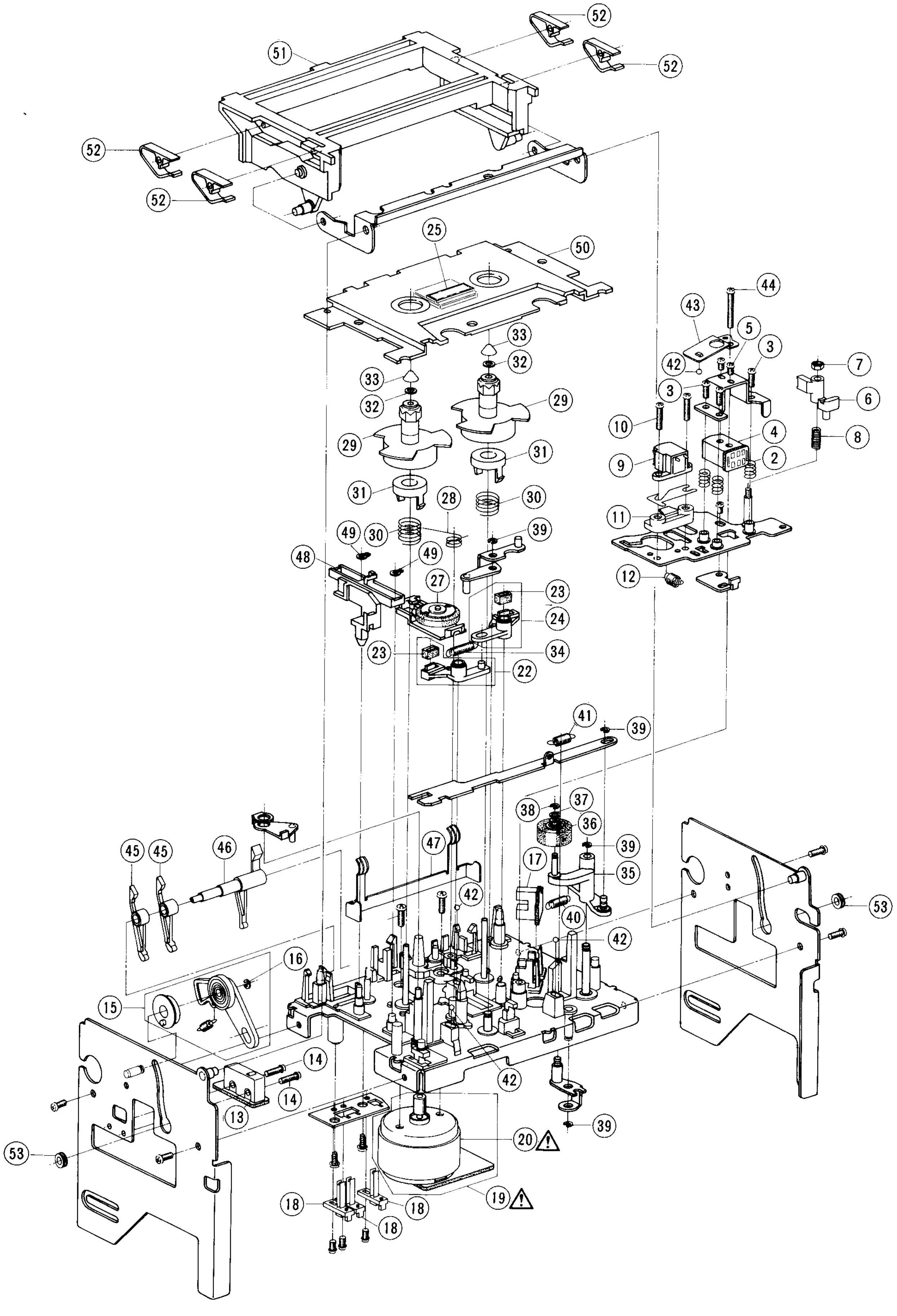
I. MODEL GX-F31

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BF-B336013	FLYWHEEL PART
2	BH-T2029A070A	HEAD BLK GX-F31
3	BL-B336150	ARM PINCH ROLLER (A) PART
4	BM-M3103A010A	⚠ MOTOR BLM-300
5	BM-B337064	⚠ MOTOR OPERATION (PULLEY) PART
6	BM-B336989	⚠ REEL MOTOR (PULLEY) PART
7	BM-T2030A120A	⚠ REEL MOTOR BLK GX-F51
8	BR-336606	REEL TABLE ASSY
9	BT-337246	⚠ TRANS POWER T-2030(A,C)
10	BT-337248	⚠ TRANS POWER T-2030(B,S)
11	BT-337247	⚠ TRANS POWER T-2030(E,V)
12	BT-337245	⚠ TRANS POWER T-2030(J)
13	BT-337244	⚠ TRANS POWER T-2030(U)
14	BZ-T2030A110A	OIL CLUTCH BLK GX-F51
15	EC-338341	C COMP 05-0034
16	EC-337017	OSC CE CSB800A 0.8MHZ
17	ED-322982	D GERMA V 1S188FM-1-LR F07
18	ED-337016	D LED SG203DA GRN
19	ED-337010	D LED SLF-201C GRN
20	ED-337014	D LED SR503D RED
21	ED-301911	D SILICON H DS448
22	ED-200469	D SILICON H DS448 FA5 F10
23	ED-316143	D SILICON H 1S2473HS F10
24	ED-200468	D SILICON V DS448-VB6
25	ED-306109	D SILIOCN W03B 100/1.0A
26	ED-322238	D SILICON 1B4B41 100/1.0A
27	ED-338561	D ZENER H HZ2 F10 B2
28	ED-338403	D ZENER V HZ11B-1S1
29	ED-338413	D ZENER V HZ24-2S1
30	ED-338412	D ZENER V HZ27-3S1
31	ED-337289	D ZENER V HZ5A-1S1
32	ED-337019	D ZENER V HZ6A-1S1
33	EF-300588	⚠ FUSE EAWK T 250V 0.20A (E,B,S,V) (F6)
34	EF-330462	⚠ FUSE GGS A 250V 0.20A (C,A) (F6)
35	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (E,B,S,V) (F3)
36	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (E,B,S,V) (F2)
37	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (E,B,S,V) (F4,5)
38	EF-623103	⚠ FUSE SEMKO T 250V 1A(B)(F1)
39	EF-327103	⚠ FUSE TSC A 250V 0.50A(U,J)(F2)
40	EF-327103	⚠ FUSE TSC A 250V 0.50A(U,J)(F3)
41	EF-306949	⚠ FUSE TSC A 250V 1.25A (U,J) (F4,5)
42	EF-309390	⚠ FUSE TSC 125V 0.50A (C,A)(F3)
43	EF-309390	⚠ FUSE TSC 125V 0.50A (C,A)(F2)
44	EF-309392	⚠ FUSE TSC 125V 1.25A (C,A)(F4,5)
45	EI-337568	HOLE ELEMENT DHD-H070
46	EI-330352	IC BA6109
47	EI-315799	IC HA12019
48	EI-336983	IC HA12038
49	EI-336761	IC LA6458S
50	EI-337013	IC LB1290
51	EI-337009	IC LC4049
52	EI-337008	IC LC7800
53	EI-337006	IC LM6402H-063
54	EI-337228	IC M5218L0
55	EI-336994	IC M5230L
56	EI-201940	IC NJM4558S
57	EI-200938	IC TA7558S
58	EI-336992	IC μPC1043
59	EI-338392	IC μPC1224H
60	EJ-283140	⚠ SOCKET SELECTER X-I7238 6P (U)
61	EJ-337654	DIN J UC-0044 P 8P
62	EL-337053	PL CORD 16.0V 80MA 400/400
63	EM-336988	IND FL FIP48BW11Y DOUBLE
64	EO-337044	COIL FIX 2 102AK-005 36MH
65	EO-337046	COIL OSC 1 0365-028 100KHZ
66	EO-315758	COIL TUN 1 100S-431 100KHZ
67	EO-337055	COIL VARI 1 FE002S 10MH
68	EP-322437	RELAY LEAD LAB2NS 2NO 5V
69	ER-337287	⚠ R FUSE ERD2FC 1/4W 20R0G
70	ER-307565	⚠ R FUSE ERD2FC 1/4W 6R8J
71	ER-336775	FILTER DB D07001K 19KHZ
72	ER-336776	FILTER DB D07003K 100KHZ
73	ER-337376	R COMP 01-0399
74	ER-337374	R COMP 01-0400
75	ER-337631	R COMP 01-0449
76	ES-312234	⚠ SW PUSH SDL-1P 01-1 E (U,E,B,S,V)
77	ES-312235	⚠ SW PUSH SDL-1P 01-1 J (J)
78	ES-312238	⚠ SW PUSH SDL-1P 01-1 UC (C,A)
79	ES-336990	SW LEAF BSW-169 01-1 NO
80	ES-337344	SW MICRO SS-01-ED UC
81	ES-337045	SW PUSH SUN312A 3-THROW
82	ES-337043	SW ROTARY SRU1023 1-02-03N
83	ES-336780	SW TACT KHH10902
84	ET-311977	PHOTO SENSOR SPI-201
85	ET-321016	TR FET 2SK117 GR,BL
86	ET-200558	TR 2SA1115 E,F
87	ET-554657	TR 2SA733A P,Q
88	ET-337012	TR 2SA984K D,E
89	ET-322598	TR 2SB632K E,F
90	ET-328438	TR 2SB808-V F,G
91	ET-308976	TR 2SC1815 BL,GR
92	ET-331279	TR 2SC1843 P,F SNP
93	ET-309353	TR 2SC2274 E,F
94	ET-337011	TR 2SC2274K D,E
95	ET-310833	TR 2SC2274K E
96	ET-200505	TR 2SC2603 E,F
97	ET-328437	TR 2SD1012-V F,G
98	ET-328868	TR 2SD1012-V G,H
99	ET-452531	TR 2SD313 E,F
100	ET-310148	TR 2SD612K E,F
101	ET-318239	TR 2SD863 E,F
102	EV-315416	R S-FIX H D8 3P 103
103	EV-315414	R S-FIX H D8 3P 203
104	EV-315412	R S-FIX H D8 3P 502
105	EV-315413	R S-FIX H D8 3P 503
106	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
107	EV-464220	R S-FIX H V8K4-1 3P 503
108	EV-464253	R S-FIX V V8K1-1 3P 202
109	EV-337052	VR ROTARY 16L10×OR B103
110	EV-337028	VR ROTARY 16P20×20 A204
111	EV-337029	VR ROTARY 16P20×2P M204 N204
112	EV-337030	VR ROTARY 16P20×2Q B103
113	HE-337047	HEAD E HJ213270 C
114	HP-H2201A010A	HEAD R/P PR4-7 C
115	MB-336021	BELT OPERATION
116	MP-336153	PINCH ROLLER (A)
117	TC-336002	HOLDER CAPSTAN (B)
118	TC-336004B	HOLDER CAPSTAN (C-2)
119	TC-336605	WIND IDLER ASSY

MECHA BLOCK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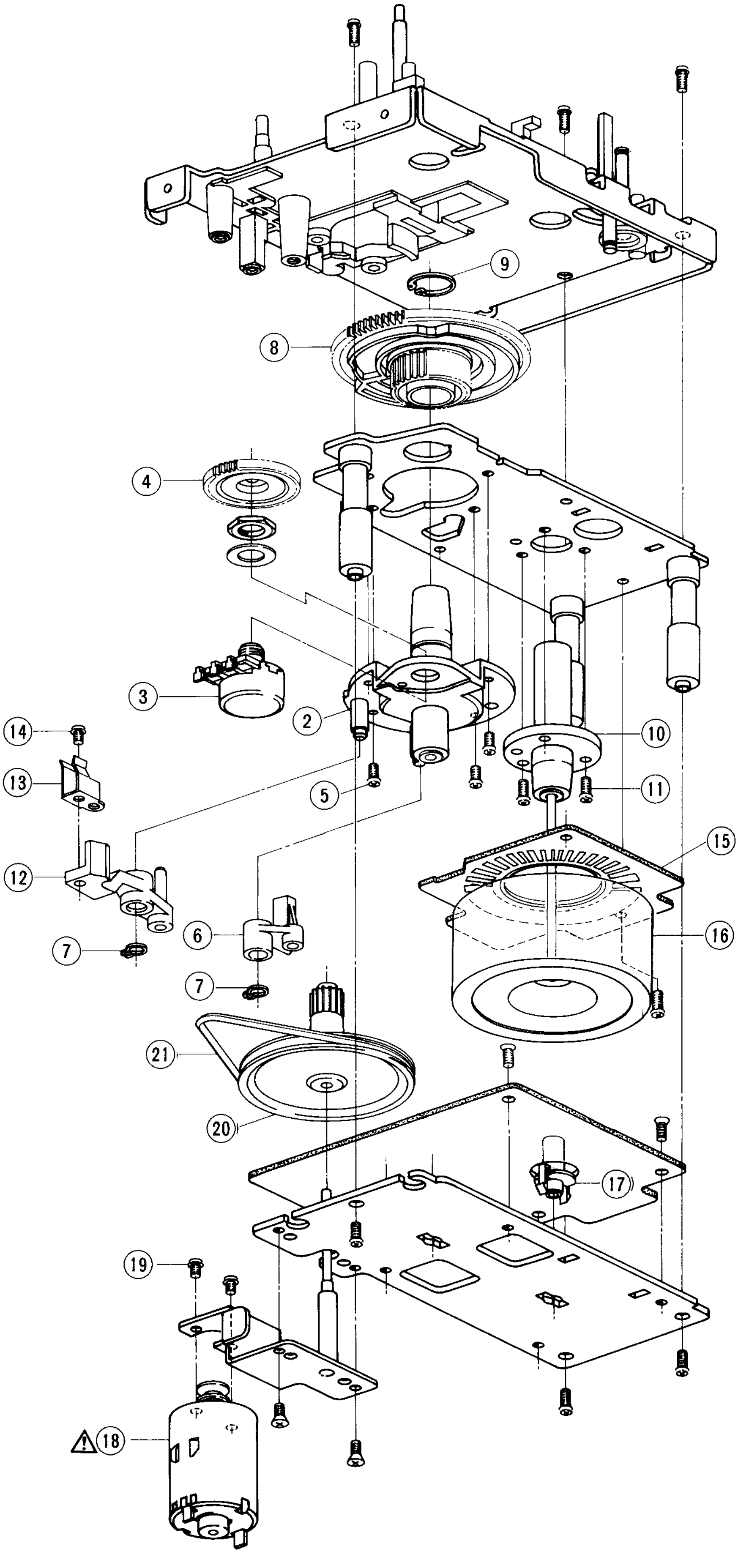
1. MECHA BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	HEAD BLOCK	
1-1x	BH-T2029A070A	HEAD BLK GX-F31
1-2	ZG-336127	SP PUSH HEAD
1-3	ZS-608106	PAN20x06STL CMT
1-4	HP-H2201A010A	HEAD R/P PR4-7 C
1-5	ZS-477876	PAN20x03STL CMT
1-6	HZ-336129	GUIDE TAPE
1-7	ZW-618884	N20STL CMT 1
1-8	ZG-336130	SP PUSH GUIDE
1-9	HE-337047	HEAD E HJ213270 C
1-10	ZS-465298	PAN23x10STL CMT
1-11	HZ-336131	HOLDER E HEAD
1-12	ZG-341972	SP PULL HEAD RETURN
	SW MICRO P.C BOARD BLOCK	
1-13	ES-337344	SW MICRO SS-01-ED UC (SW1)
	CHASSIS MECHA SIDE (L) BLOCK	
1-14	ZS-310337	PAN20x08STL CMT
1-15	BZ-T2030A110A	OIL CLUTCH BLK GX-F51
1-16	ZW-270088	RING E 190SUP CMT
	DETECTION P.C BOARD BLOCK	
1-17	ET-311977	PHOTO SENSOR SPI-201 (PH1)
	SW LEAF BLOCK	
1-18	ES-336990	⚠ SW LEAF BSW-169 01-1 NO (SW902,903,904)
	REEL MOTOR BLOCK	
1-19	BM-T2030A120A	⚠ REEL MOTOR BLK GX-F51
1-20	BM-B336989	⚠ REEL MOTOR (PULLEY) PART
1-21x	EO-669273	COIL FIX 2 FL5R200 18µH (L1,2)
	LEVER BRAKE (A) BLOCK	
1-22	BL-T2030A160A	LEVER BRAKE (A) BLK GX-F51
1-23	TC-336146	BRAKE RUBBER
	LEVER BRAKE (B) BLOCK	
1-24	BL-T2030A170A	LEVER BRAKE (B) BLK GX-F51
	D LED BLOCK	
1-25	ED-337010	D LED SLF-201C GRN (D901)
	MECHA BLOCK	
1-26x	BZ-T2029A080A	MECHA BLK GX-F31
1-27	TC-336605	WIND IDLER ASSY
1-28	ZG-336140	SP TORSION IDLER
1-29	BR-336606	REEL TABLE ASSY
1-30	ZG-336141	SP PUSH BT
1-31	TC-336142	HOLDER BT SP
1-32	ZW-330073	PW21x040x020
1-33	MT-305793	REEL CAP
1-34	ZG-312946	SP T1-3.2/0.29-16.0 T1-062
1-35	BL-B336150	ARM PINCH ROLLER (A) PART
1-36	MP-336153	PINCH ROLLER (A)
1-37	ZW-381644	PW21x040x013PSL
1-38	ZW-356657	RING E 150SUP CMT
1-39	ZW-270088	RING E 190SUP CMT
1-40	ZG-342575	SP PULL PINCH ROLLER (T-2)
1-41	ZG-321534	SP T2-3.2/0.29-12.5 T2-060
1-42	MV-357208	BALL200STL
1-43	ZG-336157	SP PLATE HEAD HOLD
1-44	ZS-342002	ST PAN26x16STL CMT
1-45	ML-336158	LEVER DETECTION (B)
1-46	ML-336159	LEVER DETECTION (A)
1-47	ZG-336160	SP PLATE CASSETTE HOLDER (A)
1-48	TC-336161	SLIDE EJECT
1-49	ZW-336603	RING GRIP 285SUP ACP
1-50	BD-B336162B	LID DECORATION (B) PART
1-51	SP-336163	LID CASE
1-52	ZG-336615	SP PLATE CASSETTE HOLDER (B)
1-53	SZ-336166	COLLAR LID

MOTOR BLOCK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2. MOTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BM-M3103A010A	MOTOR BLM-300
2-2	TC-336004B	HOLDER CAPSTAN (C-2)
2-3	EV-337052	VR ROTARY 16L10xOR B103
2-4	MZ-336005	GEAR POTENTION
2-5	ZS-432843	PAN26x04STL CMT
2-6	BL-B336007	LEVER BRAKE CAM PART
2-7	ZW-336603	RING GRIP 285SUP ACP
2-8	MZ-336006	CAM WHEEL
2-9	ZW-336604	RING S839SUP ACP
2-10	TC-336002	HOLDER CAPSTAN (B)
2-11	ZS-479474	PAN26x05STL CMT
2-12	BL-B336009	LEVER EJECT CAM PART
2-13	ZG-336011	SP PLATE CAM LEVER
2-14	ZS-477876	PAN20x03STL CMT
2-15	EA-336012	PC FG
2-16	BF-B336013	FLYWHEEL PART
2-17	TC-336016	HOLDER THRUST (A)
2-18	BM-B337064	MOTOR OPERATION (PULLEY) PART
2-19	ZS-477876	PAN20x03STL CMT
2-20	MR-336019	PULLEY OPERATE
2-21	MB-336021	BELT OPERATION

3. PRE AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BA-T2029A030A	PC PRE AMP BLK GX-F31(U) (U,J,C,A)
3-2	BA-T2029A030B	PC PRE AMP BLK GX-F31(E) (E,B,S,V)
3-3	BA-T2029A030C	PC PRE AMP BLK GX-F31-P(U) (U,J,C,A)
3-4	BA-T2029A030D	PC PRE AMP BLK GX-F31-P(E) (E,B,S,V)
	PRE AMP P.C BOARD	
3-IC1	EI-200938	IC TA75558S
3-IC2	EI-336983	IC HA12038
3-IC3	EI-337228	IC M5218L0
3-IC4	EI-336761	IC LA6458S
3-IC6	EI-338392	IC μPC1224H
3-IC7	EI-336761	IC LA6458S
3-IC8	EI-336761	IC LA6458S
3-TR2	ET-200505	TR 2SC2603 E,F
3-TR4	ET-200505	TR 2SC2603 E,F
3-TR6	ET-200505	TR 2SC2603 E,F
3-TR7,8	ET-200558	TR 2SA1115 E,F
3-TR9to16	ET-200505	TR 2SC2603 E,F
3-TR17	ET-328868	TR 2SD1012-V G,H
3-TR18	ET-331279	TR 2SC1843 P,F SNP
3-TR19to21	ET-328868	TR 2SD1012-V G,H
3-TR22to27	ET-200505	TR 2SC2603 E,F
3-TR28	ET-322598	TR 2SB632K E,F
3-TR29	ET-308976	TR 2SC1815 BL,GR
3-TR30	ET-200505	TR 2SC2603 E,F
3-TR31,32	ET-310833	TR 2SC2274K E
3-TR33	ET-309353	TR 2SC2274 E,F
3-TR34	ET-200505	TR 2SC2603 E,F
3-TR36	ET-321016	TR FET 2SK117 GR,BL
3-TR37	ET-200505	TR 2SC2603 E,F
3-TR38	ET-328437	TR 2SD1012-V F,G
3-TR39	ET-328438	TR 2SB808-V F,G
3-TR40	ET-200505	TR 2SC2603 E,F
3-D2	ED-337292	D ZENER H HZ5 B1
3-D3	ED-322982	D GERMA V 1S188FM-1-LR F07
3-D4	ED-301911	D SILICON H DS448
3-D6to11	ED-301911	D SILICON H DS448
3-D13	ED-301911	D SILICON H DS448
3-D14	ED-200468	D SILICON V DS448-VB6
3-D16to21	ED-301911	D SILICON H DS448
3-D22	ED-338413	D ZENER V HZ24-2S1
3-D23	ED-301911	D SILICON H DS448
3-J1	EJ-337027	PHONE J THROW HLJ4353-210 2×3P
3-J1	EJ-337024	PHONE J THROW HLJ4353-010 2×3P (P)
3-J2	EJ-332435	PIN J P 4P (U,J,C,A)
3-J2	EJ-332437	JACK PLATE (E,B,S,V)
3-SW1	ES-337045	SW PUSH SUN312A 3-THROW
3-VR1	EV-337029	VR ROTARY 16P20×2P M204 N204
3-VR2	EV-337028	VR ROTARY 16P20×20 A204
3-VR3	EV-337030	VR ROTARY 16P20×2Q B103
3-VR4	EV-315414	R S-FIX H D8 3P 203
3-VR5	EV-315413	R S-FIX H D8 3P 503
3-VR6	EV-315416	R S-FIX H D8 3P 103
3-VR8	EV-315416	R S-FIX H D8 3P 103
3-VR9	EV-315412	R S-FIX H D8 3P 502
3-VR10	EV-315416	R S-FIX H D8 3P 103
3-VR11,12	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
3-L1	EO-669273	COIL FIX 2 FL5R200 18μH
3-T1	EO-337046	COIL OSC 1 0365-028 100KHZ
3-FL1	EO-337044	COIL FIX 2 102AK-005 36MH
3-FL2	EO-337055	COIL VARI 1 FE002S 10MH
3-FL3	ER-336776	FILTER DB D07003K 100KHZ
3-FL4	ER-336775	FILTER DB D07001K 19KHZ
3-FL5,6	EO-315758	COIL TUN 1 100S-431 100KHZ
3-RL1	EP-322437	RELAY LEAD LAB2NS 2NO 5V
3-FR1,2	ER-307565	⚠ R FUSE ERD2FC 1/4W 6R8J

REF. NO.	PARTS NO.	DESCRIPTION
3-C4	EC-313532	C EC V F05 NP 04D 1R0M 50.0DC
3-C63	EC-331631	C STY V SNP CQFS 821J 50DC
3-C65	EC-338042	C EC V F05 NP NXA 2R2M 50DC
3-C75	EC-314992	C STY V F05 CQF09 681J 50DC
3-C77	EC-315335	C EC V F05 NP 04D 4R7M 25DC
3-C81	EC-308877	C EC V F05 NP 04D 3R3M 25DC
3-C92	EC-337005	C PP V F10 ECQ-F 152J 630DC
3-C93,94	EC-270483	C MC V FM 101J 500DC
3-C98	EC-306017	C STY V F05 CQ09S 221J 50DC
	PHONE JACK P.C BOARD	
3-J3	EJ-336885	PHONE J 3P HLJ0607-023 6.3
3-J3	EJ-336886	PHONE J 3P HLJ0607-020 6.3(P)

4. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BA-T2029A040A	PC SYS CON BLK GX-F31(U)
4-2	BA-T2029A040B	PC SYS CON BLK GX-F31(J)
4-3	BA-T2029A040C	PC SYS CON BLK GX-F31(C) (C,A)
4-4	BA-T2029A040D	PC SYS CON BLK GX-F31(C) (E,S,V)
4-5	BA-T2029A040E	PC SYS CON BLK GX-F31(B)
	SYS. CON. P.C BOARD BLOCK	
4-IC1	EI-337006	IC LM6402H-063
4-IC2,3	EI-337013	IC LB1290
4-IC4,5	EI-337008	IC LC7800
4-IC6	EI-337009	IC LC4049
4-IC7	EI-336761	IC LA6458S
4-IC8	EI-330352	IC BA6109
4-IC9	EI-336992	IC μPC1043
4-IC10	EI-336994	⚠ IC M5230L
4-TR1	ET-322598	⚠ TR 2SB632K E,F
4-TR2,3	ET-310148	⚠ TR 2SD612K E,F
4-TR4	ET-308976	TR 2SC1815 BL,GR
4-TR5	ET-318239	⚠ TR 2SD863 E,F
4-TR6	ET-310148	⚠ TR 2SD612K E,F
4-TR7	ET-452531	⚠ TR 2SD313 E,F
4-TR8	ET-308976	TR 2SC1815 BL,GR
4-TR9to17	ET-200505	TR 2SC2603 E,F
4-TR18to21	ET-336997	TR 2SB808-V G,H
4-TR22,23	ET-328868	TR 2SD1012-V G,H
4-TR24to27	ET-200505	TR 2SC2603 E,F
4-TR29	ET-200505	TR 2SC2603 E,F
4-TR30	ET-554657	TR 2SA733A P,Q
4-D1	ED-322238	D SILICON 1B4B41 100/1.0A
4-D2to5	ED-306109	⚠ D SILICON W03B 100/1.0A
4-D6	ED-338412	D ZENER V HZ27-3S1
4-D7	ED-337019	D ZENER V HZ6A-1S1
4-D8	ED-338403	D ZENER V HZ11B-1S1
4-D9,10	ED-200468	D SILICON V DS448-VB6
4-D12	ED-337289	D ZENER V HZ5A-1S1
4-D14	ED-200468	D SILICON V DS448-VB6
4-D17,18	ED-200468	D SILICON V DS448-VB6
4-D20	ED-306109	D SILICON W03B 100/1.0A
4-D22	ED-337019	D ZENER V HZ6A-1S1
4-SW1	ES-312234	⚠ SW PUSH SDL-1P 01-1 E (U,E,B,S,V)
4-SW1	ES-312235	⚠ SW PUSH SDL-1P 01-1 J (J)
4-SW1	ES-312238	⚠ SW PUSH SDL-1P 01-1 UC (C,A)
4-VR1	EV-464220	R S-FIX H V8K4-1 3P 503
4-VS1	EJ-283140	⚠ SOCKET SELECTER X-17238 6P (U)
4-CR1	EC-338341	C COMP 05-0034
4-CR2	ER-337374	R COMP 01-0400
4-CR3	ER-337376	R COMP 01-0399
4-CR4	ER-337631	R COMP 01-0449
4-X1	EC-337017	OSC CE CSB800A 0.8MHZ
4-FR2	ER-337287	⚠ R FUSE ERD2FC 1/4W 20R0G
4-R5	ER-337283	R MF V 1/4W 3901G
4-R6	ER-337284	R MF V 1/4W 1202G
4-R7,8	ER-325270	R OMF H FS 1W 272J
4-R22	ER-313699	R OMF H FS 2W 221J
4-R55	ER-338231	R MF V 1/4W 5361F
4-R56	ER-338232	R MF V 1/4W 2871F
4-R57	ER-338233	R MF V 1/4W 2261F
4-R58	ER-338234	R MF V 1/4W 1331F
4-R59	ER-338235	R MF V 1/4W 1820F
4-C4	EC-306986	C STY V F05 500 221K 50DC
4-C8	EC-338396	⚠ C MMY V ECQEW 473M 250AC (U)
4-C8	EC-338400	⚠ C MMY V ECQ-E 473M 125DC (J)
4-C8	EC-338419	⚠ C MMY V ECQUE 473JM 125AC (C,A)
4-C8	EC-331410	⚠ C MMY V ECQUF 473M 250AC (E,B,S,V)

REF. No.	PARTS NO.	DESCRIPTION
	SW P.C BOARD	
4-SW1	ES-337043	SW ROTARY SRU1023 1-02-03N
4-SW2	ES-337043	SW ROTARY SRU1023 1-02-03N
4-J1	EJ-337654	DIN J UC-0044 P 8P

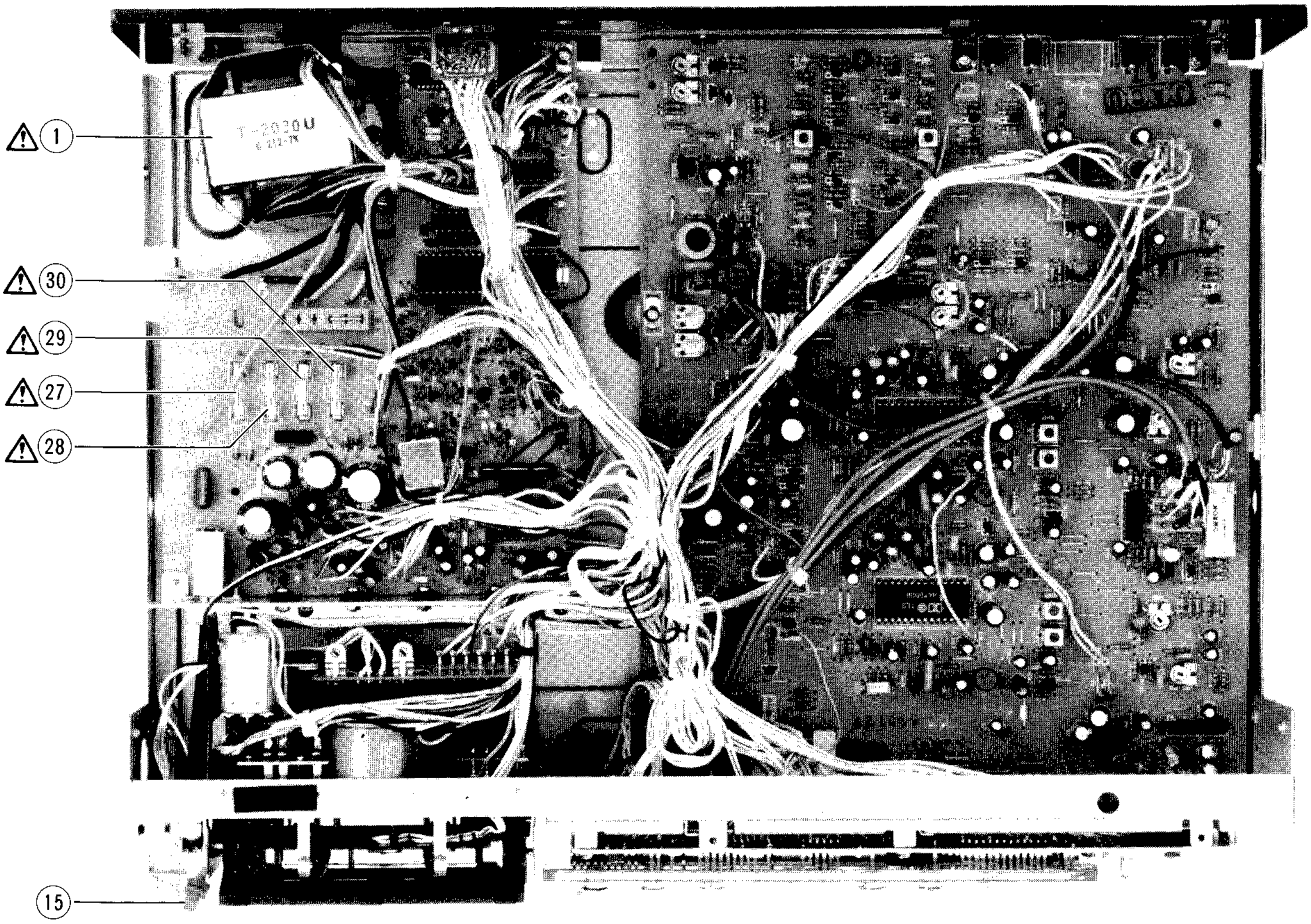
5. METER/OPERATE P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-IC1,2	EI-315799	IC HA12019
5-IC3	EI-337013	IC LB1290
5-D1	ED-200469	D SILICON H DS448 FA5 F10
5-D2	ED-337014	D LED SR503D RED
5-D3	ED-200469	D SILICON H DS448 FA5 F10
5-D4	ED-337016	D LED SG203DA GRN
5-IN1	EM-336988	IND FL FIP48BW11Y DOUBLE
5-SW1to9	ES-336780	SW TACT KHH10902

6. MOTOR P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-IC1,2	EI-201940	IC NJM4558S
6-IC3,4	EI-337568	HOLE ELEMENT DHD-H070
6-TR1	ET-337011	TR 2SC2274K D,E
6-TR2	ET-337012	TR 2SA984K D,E
6-TR3	ET-337011	TR 2SC2274K D,E
6-TR4	ET-337012	TR 2SA984K D,E
6-D1to4	ED-316143	D SILICON H 1S2473HS F10
6-D5	ED-338561	D ZENER H HZ2 F10 B2
6-VR1,2	EV-464253	R S-FIX V V8K1-1 3P 202

ASSEMBLY BLOCK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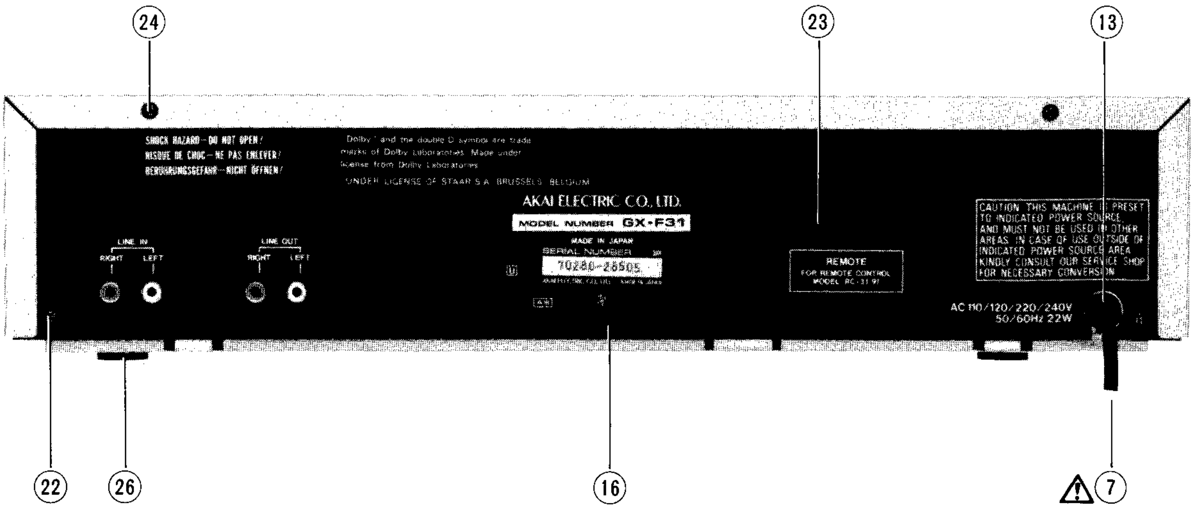
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SHOCK HAZARD - DO NOT OPEN!
RISQUE DE CHOC - NE PAS ENLEVER!
BERÜHRUNGSGEFAHR - NICHT ÖFFNEN!
UNDER LICENSE OF STAAR S.A. BRUSSELS, BELGIUM
AKAI ELECTRIC CO., LTD.
MODEL NUMBER GX-F31
MADE IN JAPAN
SERIAL NUMBER
70280-28505
LINE IN
RIGHT
LEFT
LINE OUT
RIGHT
LEFT
REMOTE
FOR REMOTE CONTROL
MODEL RC-31
CAUTION THIS MACHINE IS PRESET TO INDICATED POWER SOURCE AND MUST NOT BE USED IN OTHER AREAS. IN CASE OF USE OUTSIDE OF INDICATED POWER SOURCE AREA KINDLY CONSULT OUR SERVICE SHOP FOR NECESSARY CONVERSION
AC 110/120/220/240V
50/60Hz 22W
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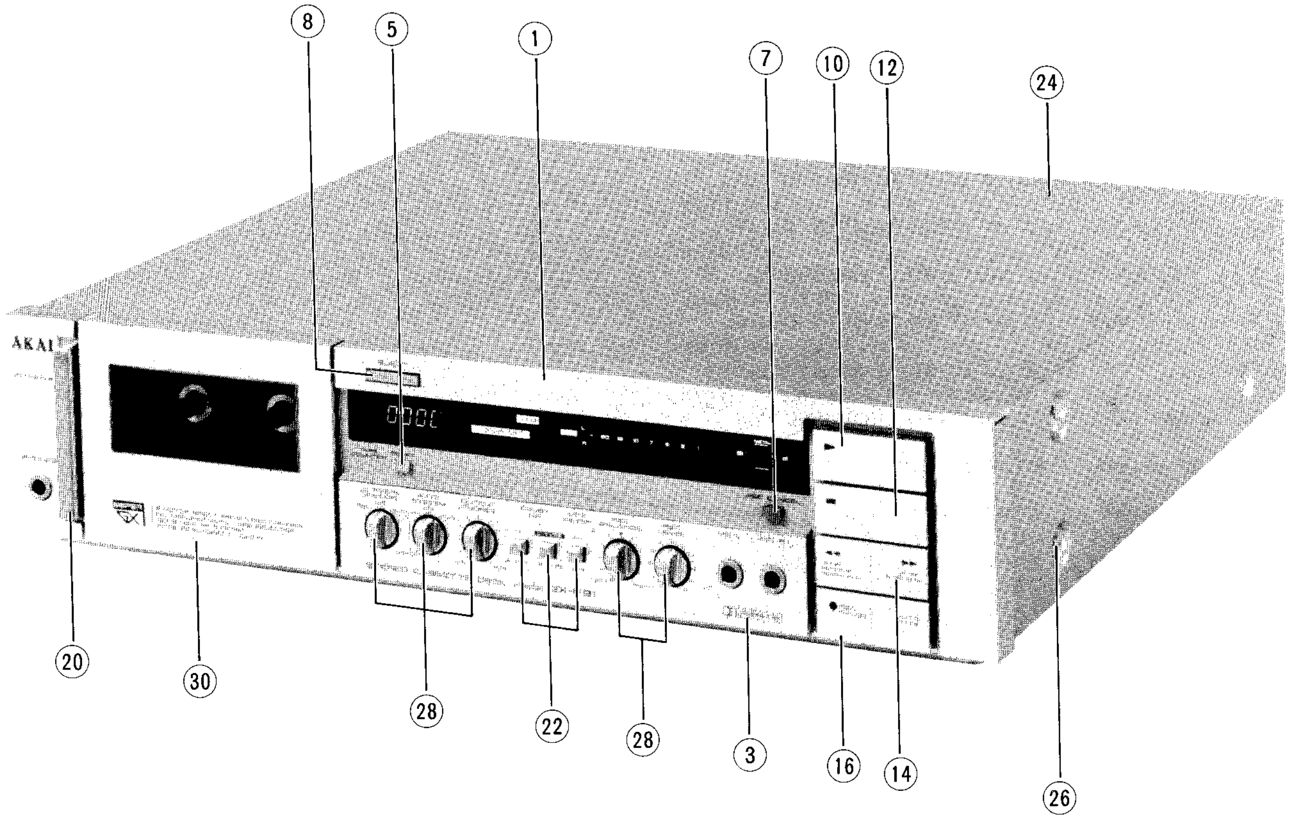
7. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
7-1	BT-337244	⚠ TRANS POWER T-2030(U)
7-2x	BT-337245	⚠ TRANS POWER T-2030(J)
7-3x	BT-337246	⚠ TRANS POWER T-2030(A,C)
7-4x	BT-337247	⚠ TRANS POWER T-2030(E,V)
7-5x	BT-337248	⚠ TRANS POWER T-2030(B,S)
7-6x	ZS-301398	ST BID40x08STL CMT
7-7	EW-306428	⚠ AC CORD 2 CORES KP-205A, VFF J (U)
7-8x	EW-306427	⚠ AC CORD 2 CORES KP-211, VFF J (J)
7-9x	EW-305691	⚠ AC CORD 2 CORES KP-8, SPT-1 UC (C,A)
7-10x	EW-313882	⚠ AC CORD 2 CORES KP-419C, LTCE-2F E (E,V)
7-11x	EW-313884	⚠ AC CORD 2 CORES GTBS-2F 24/0.20x2 B (B)
7-12x	EW-201515	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
7-13	SZ-631945	STRAIN RELIEF SR-4N-4 (U,J,C,A,E,S,V)
7-14x	EJ-692908	STRAIN RELIEF SR-5N-4 (B)
7-15	EL-337053	PL CORD 16.0V 80MA 400/400
7-16	SP-336190F	PANEL REAR GX-F31 (U) AS
7-17x	SP-336190G	PANEL REAR GX-F31 (J) AS
7-18x	SP-336190H	PANEL REAR GX-F31 (C) AS
7-19x	SP-336190M	PANEL REAR GX-F31 (A) AS
7-20x	SP-336190J	PANEL REAR GX-F31 (E,V) AS
7-21x	SP-336190K	PANEL REAR GX-F31 (B,S) AS
7-22	ZS-463353	T2BR30x08STL BNI
7-23	ZW-231030	RV NYL30x045 BL
7-24	ZS-463353	T2BR30x08STL BNI
7-25x	ZW305013	RV POP32
7-26	SA-336217	FOOT
7-27	EF-327103	⚠ FUSE TSC A 250V 0.50A (F2)(U,J)
7-28	EF-327103	⚠ FUSE TSC A 250V 0.50A (F3)(U,J)
7-29	EF-306949	⚠ FUSE TSC A 250V 1.25A (F4)(U,J)
7-30	EF-306949	⚠ FUSE TSC A 250V 1.25A (F5)(U,J)
7-31x	EF-309390	⚠ FUSE TSC 125V 0.50A (F2)(C,A)
7-32x	EF-309390	⚠ FUSE TSC 125V 0.50A (F3)(C,A)
7-33x	EF-309392	⚠ FUSE TSC 125V 1.25A (F4)(C,A)
7-34x	EF-309392	⚠ FUSE TSC 125V 1.25A (F5)(C,A)
7-35x	EF-330462	⚠ FUSE GGS A 250V 0.20A (F6)(C,A)
7-36x	EF-623103	⚠ FUSE SEMKO T 250V 1A(F1)(B)
7-37x	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F2)(E,B,S,V)
7-38x	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F3)(E,B,S,V)
7-39x	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (F4)(E,B,S,V)
7-40x	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (F5)(E,B,S,V)
7-41x	EF-300588	⚠ FUSE EAWK T 250V 0.20A (F6) (E,B,S,V)

FINAL ASSEMBLY BLOCK



8. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	FRONT PANEL BLOCK	
8-1	SP-336188C	PANEL FRONT GX-F31
8-2x	SP-336188D	PANEL FRONT GX-F31-P
8-3	BD-B336134A	PANEL SUB (D) PART
8-4x	BD-B336134B	PANEL SUB (D)-P PART
8-5	SK-336237A	KNOB (A-1)
8-6x	SK-336237C	KNOB (A)-P
8-7	SK-336237B	KNOB (A-2)
8-8	SK-336240A	KNOB (C)
8-9x	SK-336240B	KNOB (C)-P
8-10	SK-B336241A	KNOB OPERATE (A) PART
8-11x	SK-B336241B	KNOB OPERATE (A)-P PART
8-12	SK-B336242A	KNOB OPERATE (B) PART
8-13x	SK-B336242B	KNOB OPERATE (B)-P PART
8-14	SK-B336243C	KNOB OPERATE (C-2) PART
8-15x	SK-B336243D	KNOB OPERATE (C-2)-P PART
8-16	SK-B336244A	KNOB OPERATE (D) PART
8-17	BD-B336244B	KNOB OPERATE (D)-P PART
8-18x	SP-336236A	PANEL SUB (B-1)
8-19x	SP-336236B	PANEL SUB (B-1)-P
8-20	SK-336251	KNOB POWER
8-21x	SK-336252	KNOB SPACER
	FINAL ASSEMBLY BLOCK	
8-22	SK-336230A	KNOB PUSH
8-23x	SK-336230B	KNOB PUSH-P
8-24	SP-336191A	COVER UPPER
8-25x	SP-336191B	COVER UPPER-P
8-26	ZS-341959	ST BID40x06STL NI3
8-27x	ZS-341960	ST BID40x06STL BNI
8-28	SK-336229A	KNOB ROTARY
8-29x	SK-336229B	KNOB ROTARY-P
8-30	BD-B336235A	LID PANEL PART
8-31x	BD-B336235B	LID PANEL-P PART

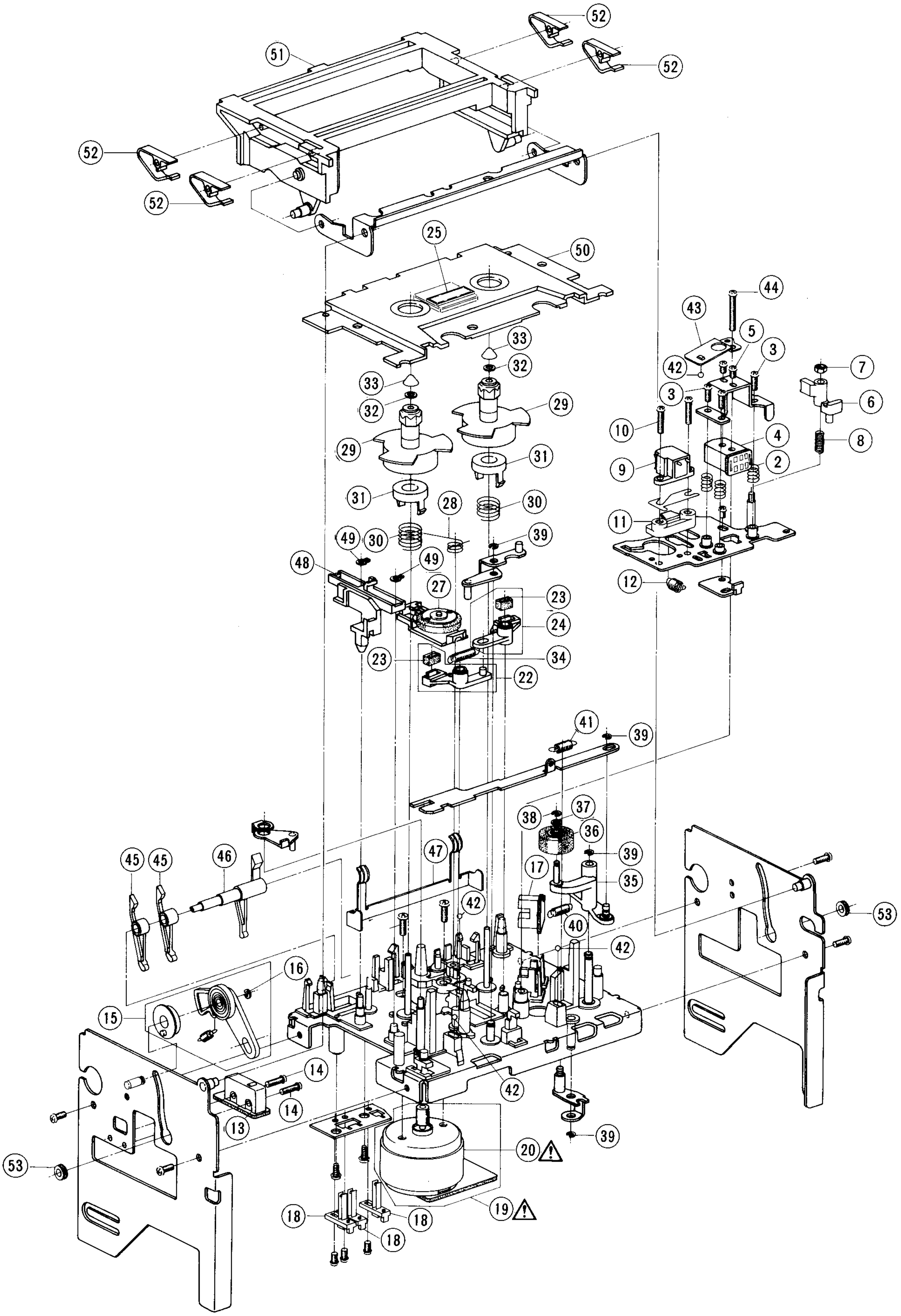
II. MODEL GX-F51

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	ET-337359	PHOTO SENSOR MCD-7213P
2	ET-311977	PHOTO SENSOR SPI-201
3	ET-321016	TR FET 2SK117 GR,BL
4	ET-200558	TR 2SA1115 E,F
5	ET-554657	TR 2SA733A P,Q
6	ET-337012	TR 2SA984K D,E
7	ET-322598	TR 2SB632K E,F
8	ET-328438	TR 2SB808-V F,G
9	ET-336997	TR 2SB808-V G,H
10	ET-308976	TR 2SC1815 BL,GR
11	ET-337258	TR 2SC1843 E,F
12	ET-331279	TR 2SC1843 P,F SNP
13	ET-309353	TR 2SC2274 E,F
14	ET-337011	TR 2SC2274K D,E
15	ET-310833	TR 2SC2274K E
16	ET-200505	TR 2SC2603 E,F
17	ET-316171	TR 2SC536K-NP E,F
18	ET-328437	TR 2SD1012-V F,G
19	ET-328868	TR 2SD1012-V G,H
20	ET-452531	TR 2SD313 E,F
21	ET-310148	TR 2SD612K E,F
22	ET-318239	TR 2SD863 E,F
23	EV-315416	R S-FIX H D8 3P 103
24	EV-321637	R S-FIX H D8 3P 104
25	EV-315414	R S-FIX H D8 3P 203
26	EV-315412	R S-FIX H D8 3P 502
27	EV-315413	R S-FIX H D8 3P 503
28	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
29	BF-B336013	FLYWHEEL PART
30	BH-T2030A190A	HEAD BLK GX-F51
31	BL-B336150	ARM PINCH ROLLER (A) PART
32	BM-M3103A010A	⚠ MOTOR BLM-300
33	BM-B337064	⚠ MOTOR OPERATION (PULLEY) PART
34	BM-B336989	⚠ REEL MOTOR (PULLEY) PART
35	BM-T2030A120A	REEL MOTOR BLK GX-F51
36	BR-336606	REEL TABLE ASSY
37	BT-337246	⚠ TRANS POWER T-2030(A,C)
38	BT-337248	⚠ TRANS POWER T-2030(B,S)
39	BT-337247	⚠ TRANS POWER T-2030(E,V)
40	BT-337245	⚠ TRANS POWER T-2030(J)
41	BT-337244	⚠ TRANS POWER T-2030(U)
42	BZ-T2030A110A	OIL CLUTCH BLK GX-F51
43	EC-338341	C COMP 05-0034
44	EC-337017	OSC CE CSB800A 0.8MHZ
45	ED-328605	D GERMA H 1S188FM-1-LH SNP
46	ED-308952	D GERMA V 1K34A-LR F07
47	ED-337016	D LED SG203DA GRN
48	ED-337010	D LED SLF-201C GRN
49	ED-337014	D LED SR503D RED
50	ED-301911	D SILICON H DS448
51	ED-200469	D SILICON H DS448 FA5 F10
52	ED-316143	D SILICON H 1S2473HS F10
53	ED-200468	D SILICON V DS448-VB6
54	ED-306109	D SILICON W03B 100/1.0A
55	ED-322238	D SILICON 1B4B41 100/1.0A
56	ED-338092	D ZENER H HZ-2 B1
57	ED-338561	D ZENER H HZ2 F10 B2
58	ED-337292	D ZENER H HZ5 B1
59	ED-309069	D ZENER H HZ6 B2
60	ED-338403	D ZENER V HZ11B-1S1
61	ED-338413	D ZENER V HZ24-2S1
62	ED-338412	D ZENER V HZ27-3S1
63	ED-337289	D ZENER V HZ5A-1S1
64	ED-337019	D ZENER V HZ6A-1S1
65	ED-336998	D ZENER V HZ6B-2S1
66	EF-300588	⚠ FUSE EAWK T 250V 0.20A (E,B,S,V)(F6)
67	EF-330462	⚠ FUSE GGS A 250V 0.20A (C,A)(F6)
68	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (E,B,S,V)(F3)
69	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (E,B,S,V)(F4,5)
70	EF-623103	⚠ FUSE SEMKO T 250V 1A(B)(F1)
71	EF-327103	⚠ FUSE TSC A 250V 0.50A(U,J)(F3)
72	EF-306949	⚠ FUSE TSC A 250V 1.25A (U,J)(F4,5)
73	EF-309390	⚠ FUSE TSC 125V 0.50A(C,A)(F3)
74	EF-309392	⚠ FUSE TSC 125V 1.25A(C,A)(F4,5)
75	EI-337568	HOLE ELEMENT DHD-H070
76	EI-330352	IC BA6109
77	EI-315799	IC HA12019
78	EI-336983	IC HA12038
79	EI-336761	IC LA6458S
80	EI-337013	IC LB1290
81	EI-337009	IC LC4049
82	EI-337008	IC LC7800
83	EI-337006	IC LM6402H-063
84	EI-337369	IC MB74LS00M
85	EI-337242	IC MB8843-600M
86	EI-337228	IC M5218L0
87	EI-336994	IC M5230L
88	EI-213390	IC NJM4558D
89	EI-201940	IC NJM4558S
90	EI-336995	IC NJM78L05A
91	EI-200938	IC TA75558S
92	EI-302233	IC TC4051BP
93	EI-336992	IC μPC1043
94	EI-338392	IC μPC1224H
95	EJ-283140	⚠ SOCKET SELECTER X-17238 6P (U)
96	EJ-337654	DIN J UC-0044 P 8P
97	EL-337053	PL CORD 16.0V 80MA 400/400
98	EM-337243	IND FL FIP48AW11Y DOUBLE
99	EO-337044	COIL FIX 2 102AK-005 36MH
100	EO-337046	COIL OSC 1 0365-028 100KHZ
101	EO-315758	COIL TUN 1 100S-431 100KHZ
102	EO-337055	COIL VARI 1 FE002S 10MH
103	EP-322437	RELAY LEAD LAB2NS 2NO 5V
104	ER-337287	⚠ R FUSE ERD2FC 1/4W 20ROG
105	ER-337286	⚠ R FUSE ERD2FC 1/4W 30ROG
106	ER-307565	⚠ R FUSE ERD2FC 1/4W 6R8J
107	ER-337380	FILTER CE KMFC-1001S 3.580MHZ
108	ER-336775	FILTER DB D07001K 19KHZ
109	ER-336776	FILTER DB D07003K 100KHZ
110	ER-337376	R COMP 01-0399
111	ER-337374	R COMP 01-0400
112	ER-337631	R COMP 01-0449
113	ES-312234	⚠ SW PUSH SDL-1P 01-1 E (U,E,B,S,V)
114	ES-312235	⚠ SW PUSH SDL-1P 01-1 J (J)
115	ES-312238	⚠ SW PUSH SDL-1P 01-1 UC (C,A)
116	ES-336990	SW LEAF BSW-169 01-1 NO
117	ES-337344	SW MICRO SS-01-ED UC
118	ES-337045	SW PUSH SUN312A 3-THROW
119	ES-337232	SW ROTARY SBM1023N 2-02-03N
120	ES-337231	SW ROTARY SBM1024N 2-02-04N
121	ES-336780	SW TACT KHH10902
122	EV-464220	R S-FIX H V8K4-1 3P 503
123	EV-522663	R S-FIX V V8K1-1 3P 104
124	EV-464253	R S-FIX V V8K1-1 3P 202
125	EV-464264	R S-FIX V V8K1-1 3P 503
126	EV-337052	VR ROTARY 16L10xOR B103
127	EV-337028	VR ROTARY 16P20x20 A204
128	EV-337029	VR ROTARY 16P20x2P M204 N204
129	EV-337030	VR ROTARY 16P20x2Q B103
130	HE-337047	HEAD E HJ213270 C
131	HP-H2201A010A	HEAD R/P PR4-7 C
132	MB-336021	BELT OPERATION
133	MP-336153	PINCH ROLLER (A)
134	TC-336002	HOLDER CAPSTAN (B)
135	TC-336004B	HOLDER CAPSTAN (C-2)
136	TC-336605	WIND IDLER ASSY

MECHA BLOCK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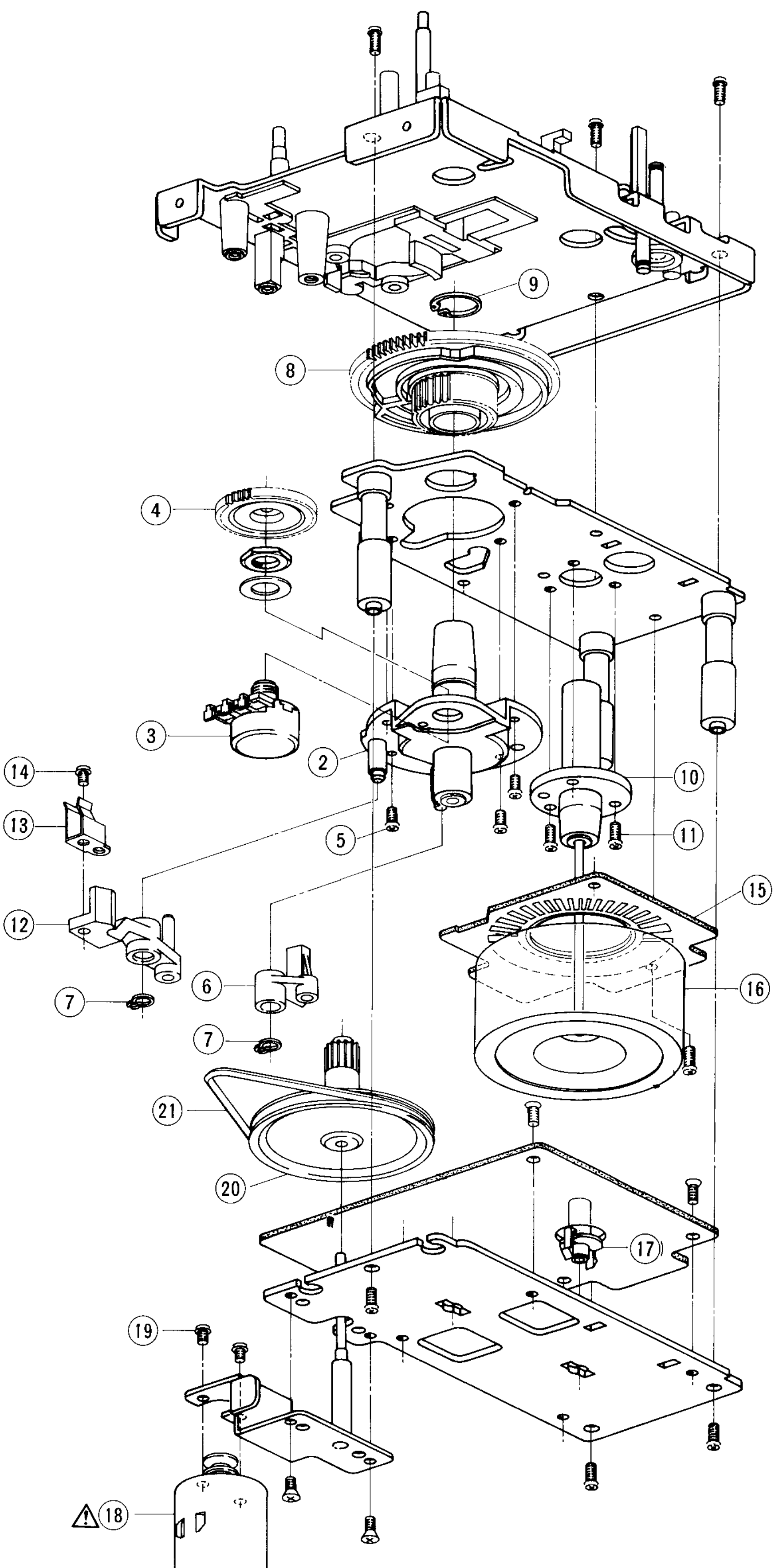
1. MECHA BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	HEAD BLOCK	
1-1x	BH-T2030A190A	HEAD BLK GX-F51
1-2	ZG-336127	SP PUSH HEAD
1-3	ZS-608106	PAN20x06STL CMT
1-4	HP-H2201A010A	HEAD R/P PR4-7 C
1-5	ZS-477876	PAN20x03STL CMT
1-6	HZ-336129	GUIDE TAPE
1-7	ZW-618884	N20STL CMT 1
1-8	ZG-336130	SP PUSH GUIDE
1-9	HE-337047	HEAD E HJ213270 C
1-10	ZS-465298	PAN23x10STL CMT
1-11	HZ-336131	HOLDER E HEAD
1-12	ZG-341972	SP PULL HEAD RETURN
	SW MICRO P.C BOARD BLOCK	
1-13	ES-337344	SW MICRO SS-01-ED UC (SW1)
	CHASSIS MECHA SIDE (L) BLOCK	
1-14	ZS-310337	PAN20x08STL CMT
1-15	BZ-T2030A110A	OIL CLUTCH BLK GX-F51
1-16	ZW-270088	RING E 190SUP CMT
	DETECTION P.C BOARD BLOCK	
1-17	ET-311977	PHOTO SENSOR SPI-201 (PH1)
	SW LEAF BLOCK	
1-18	ES-336990	SW LEAF BSW-169 01-1 NO (SW902,903,904)
	REEL MOTOR BLOCK	
1-19	BM-T2030A120A	REEL MOTOR BLK GX-F51
1-20	BM-B336989	⚠ REEL MOTOR (PULLEY) PART
1-21x	EO-669273	COIL FIX 2 FL5R200 18μH (L1,2)
	LEVER BRAKE (A) BLOCK	
1-22	BL-T2030A160A	LEVER BRAKE (A) BLK GX-F51
1-23	TC-336146	BRAKE RUBBER
	LEVER BRAKE (B) BLOCK	
1-24	BL-T2030A170A	LEVER BRAKE (B) BLK GX-F51
	D LED BLOCK	
1-25	ED-337010	D LED SLF-201C GRN (D901)
	MECHA BLOCK	
1-26x	BZ-T2030A080A	MECHA BLK GX-F51
1-27	TC-336605	WIND IDLER ASSY
1-28	ZG-336140	SP TORSION IDLER
1-29	BR-336606	REEL TABLE ASSY
1-30	ZG-336141	SP PUSH BT
1-31	TC-336142	HOLDER BT SP
1-32	ZW-330073	PW21x040x020
1-33	MT-305793	REEL CAP
1-34	ZG-312946	SP T1-3.2/0.29-16.0 T1-062
1-35	BL-B336150	ARM PINCH ROLLER (A) PART
1-36	MP-336153	PINCH ROLLER (A)
1-37	ZW-381644	PW21x040x013PSL
1-38	ZW-356657	RING E 150SUP CMT
1-39	ZW-270088	RING E 190SUP CMT
1-40	ZG-342575	SP PULL PINCH ROLLER (T-2)
1-41	ZG-321534	SP T2-3.2/0.29-12.5 T2-060
1-42	MV-357208	BALL200STL
1-43	ZG-336157	SP PLATE HEAD HOLD
1-44	ZS-342002	ST PAN26x16STL CMT
1-45	ML-336158	LEVER DETECTION (B)
1-46	ML-336159	LEVER DETECTION (A)
1-47	ZG-336160	SP PLATE CASSETTE HOLDER (A)
1-48	TC-336161	SLIDE EJECT
1-49	ZW-336603	RING GRIP 285SUP ACP
1-50	BD-B336162B	LID DECORATION (B) PART
1-51	SP-336163	LID CASE
1-52	ZG-336615	SP PLATE CASSETTE HOLDER (B)
1-53	SZ-336166	COLLAR LID

MOTOR BLOCK



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2. MOTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BM-M3103A010A	MOTOR BLM-300
2-2	TC-336004B	HOLDER CAPSTAN (C-2)
2-3	EV-337052	VR ROTARY 16L10xOR B103
2-4	MZ-336005	GEAR POTENTION
2-5	ZS-432843	PAN26x04STL CMT
2-6	BL-B336007	LEVER BRAKE CAM PART
2-7	ZW-336603	RING GRIP 285SUP ACP
2-8	MZ-336006	CAM WHEEL
2-9	ZW-336604	RING S839SUP ACP
2-10	TC-336002	HOLDER CAPSTAN (B)
2-11	ZS-479474	PAN26x05STL CMT
2-12	BL-B336009	LEVER EJECT CAM PART
2-13	ZG-336011	SP PLATE CAM LEVER
2-14	ZS-477876	PAN20x03STL CMT
2-15	EA-336012	PC FG
2-16	BF-B336013	FLYWHEEL PART
2-17	TC-336016	HOLDER THRUST (A)
2-18	BM-B337064	MOTOR OPERATION (PULLEY) PART)
2-19	ZS-477876	PAN20x03STL CMT
2-20	MR-336019	PULLEY OPERATE
2-21	MB-336021	BELT OPERATION

When ordering parts, please quote Parts Number, Description and Model Number.

3. PRE AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BA-T2030A030A	PC PRE AMP BLK GX-F51 (U) (U,J,C,A)
3-2	BA-T2030A030B	PC PRE AMP BLK GX-F51 (E) (E,B,S,V)
3-3	BA-T2030A030C	PC PRE AMP BLK GX-F51-P (U) (U,J,C,A)
3-4	BA-T2030A030D	PC PRE AMP BLK GX-F51-P (E) (E,B,S,V)
	PRE AMP P.C BOARD	
3-IC1	EI-200938	IC TA75558S
3-IC2	EI-336983	IC HA12038
3-IC3	EI-337228	IC M5218L0
3-IC4	EI-336761	IC LA6458S
3-IC5	EI-337369	IC MB74LS00M
3-IC6	EI-338392	IC μPC1224H
3-IC7to9	EI-336761	IC LA6458S
3-TR1	ET-328868	TR 2SD1012-V G,H
3-TR2to6	ET-200505	TR 2SC2603 E,F
3-TR7,8	ET-200558	TR 2SA1115 E,F
3-TR9to16	ET-200505	TR 2SC2603 E,F
3-TR17	ET-328868	TR 2SD1012-V G,H
3-TR18	ET-337258	TR 2SC1843 E,F
3-TR19to21	ET-328868	TR 2SD1012-V G,H
3-TR22to29	ET-200505	TR 2SC2603 E,F
3-TR30	ET-200558	TR 2SA1115 E,F
3-TR31	ET-200505	TR 2SC2603 E,F
3-TR32	ET-322598	TR 2SB632K E,F
3-TR33	ET-331279	TR 2SC1843 P,F SNP
3-TR34	ET-200505	TR 2SC2603 E,F
3-TR35,36	ET-310833	TR 2SC2274K E
3-TR37	ET-309353	TR 2SC2274 E,F
3-TR38	ET-321016	TR FET 2SK117 GR,BL
3-TR41	ET-200505	TR 2SC2603 E,F
3-TR42	ET-328437	TR 2SD1012-V F,G
3-TR43	ET-328438	TR 2SB808-V F,G
3-TR44	ET-200505	TR 2SC2603 E,F
3-D1	ED-301911	D SILICON H DS448
3-D2	ED-337292	D ZENER H HZ5 B1
3-D3	ED-328605	D GERMA H 1S188FM-1-LH SNP
3-D4to13	ED-301911	D SILICON H DS448
3-D14	ED-200468	D SILICON V DS448-VB6
3-D15to17	ED-301911	D SILICON H DS448
3-D18	ED-309069	D ZENER H HZ6 B2
3-D19,20	ED-301911	D SILICON H DS448
3-D21,22	ED-200468	D SILICON V DS448-VB6
3-D23,24	ED-308952	D GERMA V 1K34A-LR F07
3-D25	ED-338413	D ZENER V HZ24-2S1
3-D26	ED-301911	D SILICON H DS448
3-J1	EJ-337027	PHONE J THROW HLJ4353-210 2×3P
3-J1	EJ-337024	PHONE J THROW HLJ4353-010 2×3P (P)
3-J2	EJ-332435	PIN J P 4P (U,J,C,A)
3-J2	EJ-332437	JACK PLATE (E,B,S,V)
3-SW1to3	ES-337045	SW PUSH SUN312A 3-THROW
3-VR1	EV-337029	VR ROTARY 16P20×2P M204 N204
3-VR2	EV-337028	VR ROTARY 16P20×2O A204
3-VR3	EV-337030	VR ROTARY 16P20×2Q B103
3-VR4	EV-315414	R S-FIX H D8 3P 203
3-VR5	EV-315413	R S-FIX H D8 3P 503
3-VR6	EV-315416	R S-FIX H D8 3P 103
3-VR7	EV-315414	R S-FIX H D8 3P 203
3-VR8	EV-321637	R S-FIX H D8 3P 104
3-VR9	EV-315412	R S-FIX H D8 3P 502
3-VR10	EV-315416	R S-FIX H D8 3P 103
3-VR11	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
3-L1	EO-669273	COIL FIX 2 FL5R200 18μH
3-RL1	EP-322437	RELAY LEAD LAB2NS 2NO 5V
3-PH1	ET-337359	PHOTO SENSOR MCD-7213P
3-FL1	EO-337044	COIL FIX 2 102AK-005 36MH
3-FL2	EO-337055	COIL VARI 1 FE002S 10MH
3-FL3	ER-336776	FILTER DB D07003K 100KHZ
3-FL4	ER-336775	FILTER DB D07001K 19KHZ
3-FL5,6	EO-315758	COIL TUN 1 100S-431 100KHZ
3-T1	EO-337046	COIL OSC 1 0365-028 100KHZ
3-FR1,2	ER-307565	⚠ R FUSE ERD2FC 1/4W 6R8J
3-C4	EC-313532	C EC V F05 NP 04D 1R0M 50DC
3-C45	EC-329431	C SA V T05 1R0K 25DC
3-C49,50	EC-308940	C EC V F05 NP 04D R47M 50DC
3-C63	EC-331631	C STY V SNP CQFS 821J 50DC
3-C65	EC-338042	C EC V F05 NP NXA 2R2M 50DC
3-C75	EC-314992	C STY V F05 CQF09 681J 50DC
3-C77	EC-332052	C EC V F05 NP SM 4R7M 35DC
3-C83	EC-333972	C EC V F05 NP SM 3R3M 50DC
3-C95	EC-337005	C PP V F10 ECQ-F 152J 630DC
3-C116	EC-306017	C STY V F05 CQ09S 221J 50DC
	PHONE JACK P.C BOARD	
3-J3	EJ-336885	PHONE J 3P HLJ0607-023 6.3 (U,J,C,A)
3-J3	EJ-336886	PHONE J 3P HLJ0607-020 6.3 (E,B,S,V)

4. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BA-T2030A050A	PC SYS CON BLK GX-F51(U)
4-2	BA-T2030A050B	PC SYS CON BLK GX-F51(J)
4-3	BA-T2030A050C	PC SYS CON BLK GX-F51(C) (C,A)
4-4	BA-T2030A050D	PC SYS CON BLK GX-F51(E) (E,S,V)
4-5	BA-T2030A050E	PC SYS CON BLK GX-F51(B)
	SYS. CON. P.C BOARD	
4-IC1	EI-337006	IC LM6402H-063
4-IC2,3	EI-337013	IC LB1290
4-IC4,5	EI-337008	IC LC7800
4-IC6	EI-337009	IC LC4049
4-IC7	EI-336761	IC LA6458S
4-IC8	EI-330352	IC BA6109
4-IC9	EI-336992	IC μPC1043
4-IC10	EI-336994	⚠ IC M5230L
4-IC11	EI-336995	⚠ IC NJM78L05A
4-TR1	ET-322598	⚠ TR 2SB632K E,F
4-TR2,3	ET-310148	⚠ TR 2SD612K E,F
4-TR4	ET-308976	TR 2SC1815 BL,GR
4-TR5	ET-318239	⚠ TR 2SD863 E,F
4-TR6	ET-322598	⚠ TR 2SB632K E,F
4-TR7	ET-452531	⚠ TR 2SD313 E,F
4-TR8	ET-308976	TR 2SC1815 BL,GR
4-TR9to17	ET-200505	TR 2SC2603 E,F
4-TR18to21	ET-336997	TR 2SB808-V G,H
4-TR22,23	ET-328868	TR 2SD1012-V G,H
4-TR24to27	ET-200505	TR 2SC2603 E,F
4-TR29	ET-200505	TR 2SC2603 E,F
4-TR30	ET-554657	TR 2SA733A P,Q
4-D1	ED-322238	⚠ D SILICON 1B4B41 100/1.0A
4-D2to5	ED-306109	⚠ D SILICON W03B 100/1.0A
4-D6	ED-338412	D ZENER V HZ27-3S1
4-D7	ED-337019	D ZENER V HZ6A-1S1
4-D8	ED-338403	D ZENER V HZ11B-1S1
4-D9,10	ED-200468	D SILICON V DS448-VB6
4-D12	ED-337289	D ZENER V HZ5A-1S1
4-D14	ED-200468	D SILICON V DS448-VB6
4-D17,18	ED-200468	D SILICON V DS448-VB6
4-D20	ED-306109	D SILICON W03B 100/1.0A
4-SW1	ES-312234	⚠ SW PUSH SDL-1P 01-1 E (U,E,B,S,V)
4-SW1	ES-312235	⚠ SW PUSH SDL-1P 01-1 J (J)
4-SW1	ES-312238	⚠ SW PUSH SDL-1P 01-1 UC (C,A)
4-VR1	EV-464220	R S-FIX H V8K4-1 3P 503
4-VS1	EJ-283140	⚠ SOCKET SELECTER X-I7238 6P (U)
4-CR1	EC-338341	C COMP 05-0034
4-CR2	ER-337374	R COMP 01-0400
4-CR3	ER-337376	R COMP 01-0399
4-CR4	ER-337631	R COMP 01-0449
4-X1	EC-337017	OSC CE CSB800A 0.8MHZ
4-FR1	ER-337286	⚠ R FUSE ERD2FC 1/4W 30R0G
4-FR2	ER-337287	⚠ R FUSE ERD2FC 1/4W 20R0G
4-R5	ER-337283	R MF V 1/4W 3901G
4-R6	ER-337284	R MF V 1/4W 1202G
4-R7,8	ER-325270	R OMF H FS 1W 272J
4-R22	ER-313699	R OMF H FS 2W 221J
4-R55	ER-338231	R MF V 1/4W 5361F
4-R56	ER-338232	R MF V 1/4W 2871F
4-R57	ER-338233	R MF V 1/4W 2261F
4-R58	ER-338234	R MF V 1/4W 1331F
4-R59	ER-338235	R MF V 1/4W 1820F
4-C4	EC-306986	C STY V F05 500 221K 50DC
4-C8	EC-338396	⚠ C MMY V ECQEW 473M 250AC (U)
4-C8	EC-338400	⚠ C MMY V ECQ-E 473M 125DC (J)
4-C8	EC-338419	⚠ C MMY V ECQUE 473JM 125AC (C,A)
4-C8	EC-331410	⚠ C MMY V ECQUF 473M 250AC (E,B,S,V)

REF. NO.	PARTS NO.	DESCRIPTION
	SW P.C BOARD	
4-SW1	ES-337231	SW ROTARY SBM1024N 2-02-04N
4-SW2	ES-337232	SW ROTARY SBM1023N 2-02-03N
4-J1	EJ-337654	DIN J UC-0044 P 8P

5. TUNING P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1	BA-T2030A040A	PC TUNING BLK GX-F51
5-IC1	EI-337242	IC MB8843-600M
5-IC2	EI-302233	IC TC4051BP
5-IC3	EI-213390	IC NJM4558D
5-TR1to6	ET-316171	TR 2SC536K-NP E,F
5-TR7to9	ET-200558	TR 2SA1115 E,F
5-TR10to18	ET-316171	TR 2SC536K-NP E,F
5-TR19,20	ET-200558	TR 2SA1115 E,F
5-TR21,22	ET-316171	TR 2SC536K-NP E,F
5-D1to3	ED-200468	D SILICON V DS448-VB6
5-D4,5	ED-336998	D ZENER V HZ6B-2S1
5-VR1,2	EV-464264	R S-FIX V V8K1-1 3P 503
5-VR3	EV-522663	R S-FIX V V8K1-1 3P 104
5-VR4	EV-464264	R S-FIX V V8K1-1 3P 503
5-FL1	ER-337380	FILTER CE KMFC-1001S 3.580MHZ
5-R12	ER-324251	R OMF H FS 1W 101J
5-R78	ER-337269	R OMF V SNP 1W 101J

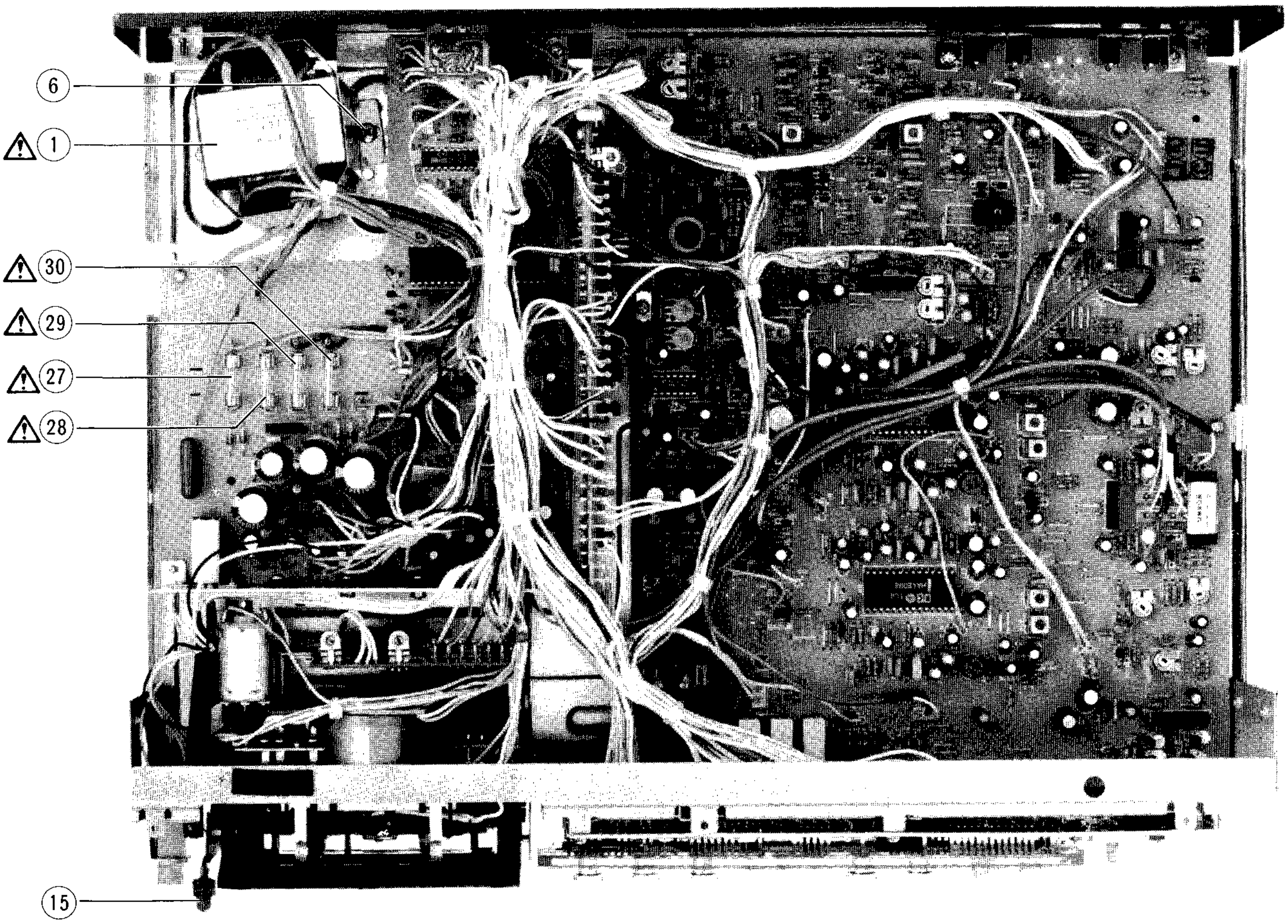
6. METER/OPERATE P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-IC1,2	EI-315799	IC HA12019
6-IC3	EI-337013	IC LB1290
6-D1	ED-200469	D SILICON H DS448 FA5 F10
6-D2	ED-337014	D LED SR503D RED
6-D3	ED-200469	D SILICON H DS448 FA5 F10
6-D4	ED-337016	D LED SG203DA GRN
6-IN1	EM-337243	INĎ FL FIP48AW11Y DOUBLE
6-SW1to13	ES-336780	SW TACT KHH10902

7. MOTOR P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
7-IC1,2	EI-201940	IC NJM4558S
7-IC3,4	EI-337568	HOLE ELEMENT DHD-H070
7-TR1	ET-337011	TR 2SC2274K D,E
7-TR2	ET-337012	TR 2SA984K D,E
7-TR3	ET-337011	TR 2SC2274K D,E
7-TR4	ET-337012	TR 2SA984K D,E
7-D1to4	ED-316143	D SILICON H 1S2473HS F10
7-D5	ED-338561	D ZENER H HZ2 F10 B2
7-VR1,2	EV-464253	R S-FIX V V8K1-1 3P 202

ASSEMBLY BLOCK



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⚠1
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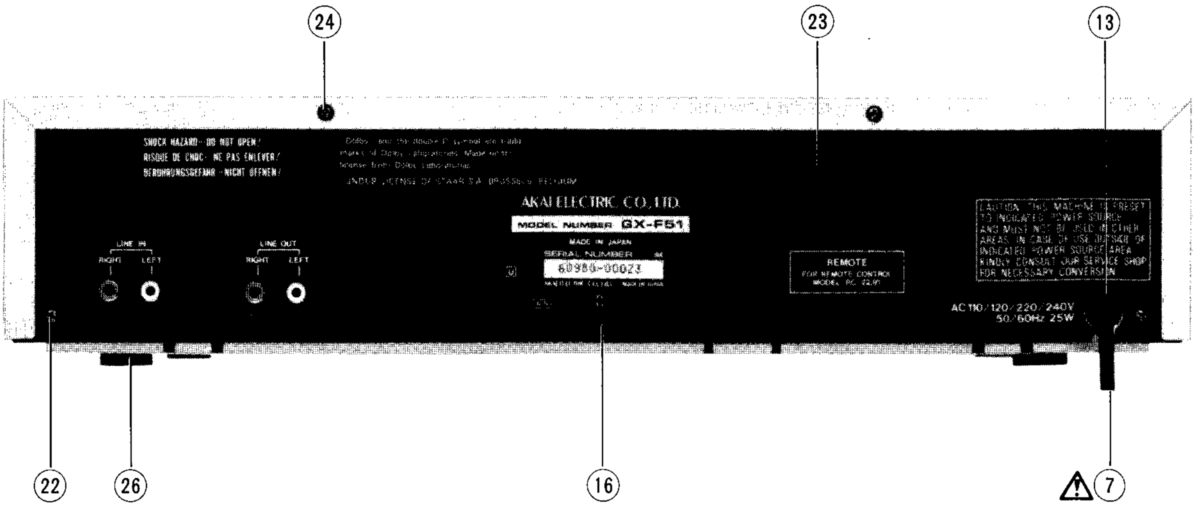

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23
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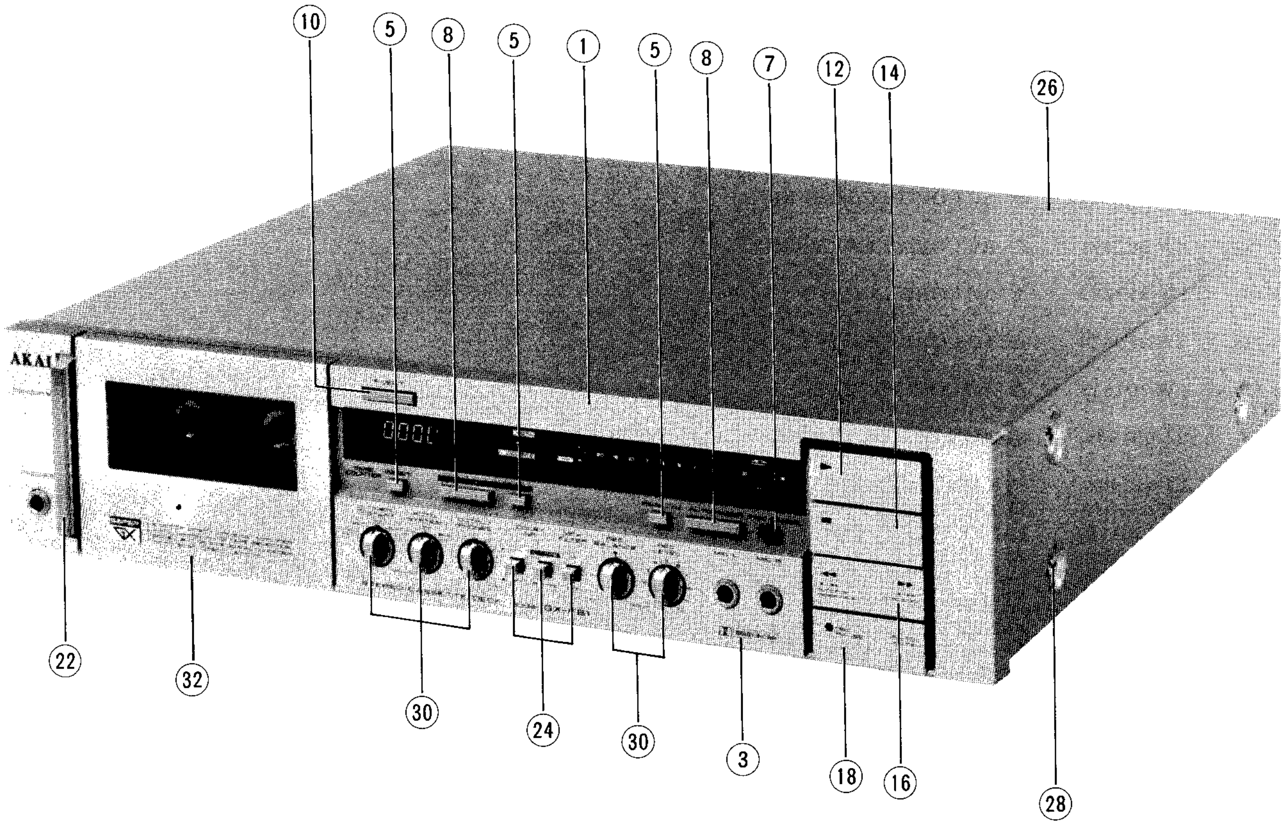
SHOCK HAZARD - DO NOT OPEN
RISQUE DE CHOC - NE PAS ENLEVER
BERUHRUNGSGEFAHR - NICHT OFFNEN
AKAI ELECTRIC CO., LTD.
MODEL NUMBER GX-F51
MADE IN JAPAN
SERIAL NUMBER
LINE IN
RIGHT
LEFT
LINE OUT
RIGHT
LEFT
REMOTE
AC 110/120/220/240V 50/60Hz 25W
22
26
16
⚠7

8. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
8-1	BT-337244	⚠ TRANS POWER T-2030(U)
8-2x	BT-337245	⚠ TRANS POWER T-2030(J)
8-3x	BT-337246	⚠ TRANS POWER T-2030(A,C)
8-4x	BT-337247	⚠ TRANS POWER T-2030(E,V)
8-5x	BT-337248	⚠ TRANS POWER T-2030(B,S)
8-6	ZS-301398	ST BID40x08STL CMT
8-7	EW-306428	⚠ AC CORD 2 CORES KP-205A, VFF J (U)
8-8x	EW-306427	⚠ AC CORD 2 CORES KP-211, VFF J (J)
8-9x	EW-305691	⚠ AC CORD 2 CORES KP-8, SPT-1 UC (C,A)
8-10x	EW-313882	⚠ AC CORD 2 CORES KP-419C, LTCE-2F E (E,V)
8-11x	EW-313884	⚠ AC CORD 2 CORES GTBS-2F 24/0.20x2 B (B)
8-12x	EW-201515	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
8-13	SZ-631945	STRAIN RELIEF SR-4N-4 (U,J,C,A,E,S,V)
8-14x	EJ-692908	STRAIN RELIEF SR-5N-4 (B)
8-15	EL-337053	PL CORD 16.0V 80MA 400/400
8-16	SP-336190A	PANEL REAR GX-F51(U) AS
8-17x	SP-336190B	PANEL REAR GX-F51(J) AS
8-18x	SP-336190C	PANEL REAR GX-F51(C) AS
8-19x	SP-336190L	PANEL REAR GX-F51(A) AS
8-20x	SP-336190D	PANEL REAR GX-F51(E,V) AS
8-21x	SP-336190E	PANEL REAR GX-F51(B,S) AS
8-22	ZS-463353	T2BR30x08STL BNI
8-23	ZW-231030	RV NYL30x045 BL
8-24	ZS-463353	T2BR30x08STL BNI
8-25x	ZW-305013	RV POP32 (A)
8-26	SA-336217	FOOT
8-27	EF-327103	⚠ FUSE TSC A 250V 0.50A (F2) (U,J)
8-28	EF-327103	⚠ FUSE TSC A 250V 0.50A (F3) (U,J)
8-29	EF-306949	⚠ FUSE TSC A 250V 1.25A (F4) (U,J)
8-30	EF-306949	⚠ FUSE TSC A 250V 1.25A (F5) (U,J)
8-31x	EF-309390	⚠ FUSE TSC 125V 0.50A (F2)(C,A)
8-32x	EF-309390	⚠ FUSE TSC 125V 0.50A (F3)(C,A)
8-33x	EF-309392	⚠ FUSE TSC 125V 1.25A (F4)(C,A)
8-34x	EF-309392	⚠ FUSE TSC 125V 1.25A (F5)(C,A)
8-35x	EF-330462	⚠ FUSE GGS A 250V 0.20A (F5) (C,A)
8-36x	EF-623103	⚠ FUSE SEMKO T 250V 1A(F1)(B)
8-37x	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F2) (E,B,S,V)
8-38x	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F3) (E,B,S,V)
8-39x	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (F4) (E,B,S,V)
8-40x	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (F5) (E,B,S,V)
8-41x	EF-300588	⚠ FUSE EAWK T 250V 0.20A (F6) (E,B,S,V)

FINAL ASSEMBLY BLOCK



9. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	FRONT PANEL BLOCK	
9-1	BD-336188A	PANEL FRONT GX-F51
9-2x	BD-336188B	PANEL FRONT GX-F51-P
9-3	BD-B336189A	PANEL SUB (A) PART
9-4x	BD-B336189B	PANEL SUB (A)-P PART
9-5	SK-336237A	KNOB (A-1)
9-6x	SK-336237C	KNOB (A)-P
9-7	SK-336237B	KNOB (A-2)
9-8	SK-336239A	KNOB (B)
9-9x	SK-336239B	KNOB (B)-P
9-10	SK-336240A	KNOB (C)
9-11x	SK-336240B	KNOB (C)-P
9-12	SK-B336241A	KNOB OPERATE (A) PART
9-13x	SK-B336241B	KNOB OPERATE (A)-P PART
9-14	SK-B336242A	KNOB OPERATE (B) PART
9-15x	SK-B336242B	KNOB OPERATE (B)-P PART
9-16	SK-B336243C	KNOB OPERATE (C-2) PART
9-17x	SK-B336243D	KNOB OPERATE (C-2)-P PART
9-18	SK-B336244A	KNOB OPERATE (D) PART
9-19x	BD-B336244B	KNOB OPERATE (D)-P PART
9-20x	SP-336236A	PANEL SUB (B-1)
9-21x	SP-336236B	PANEL SUB (B-1)-P
9-22	SK-336251	KNOB POWER
	FINAL ASSEMBLY BLOCK	
9-23x	SK-336252	KNOB SPACER
9-24	SK-336230A	KNOB PUSH
9-25x	SK-336230B	KNOB PUSH-P
9-26	SP-336191A	COVER UPPER
9-27x	SP-336191B	COVER UPPER-P
9-28	ZS-341959	ST BID40x06STL NI3
9-29x	ZS-341960	ST BID40x06STL BNI
9-30	SK-336229A	KNOB ROTARY
9-31x	SK-336229B	KNOB ROTARY-P
9-32	BD-B336235A1	LID PANEL PART
9-33x	BD-B336235B1	LID PANEL-P PART

III. MODEL GX-F71

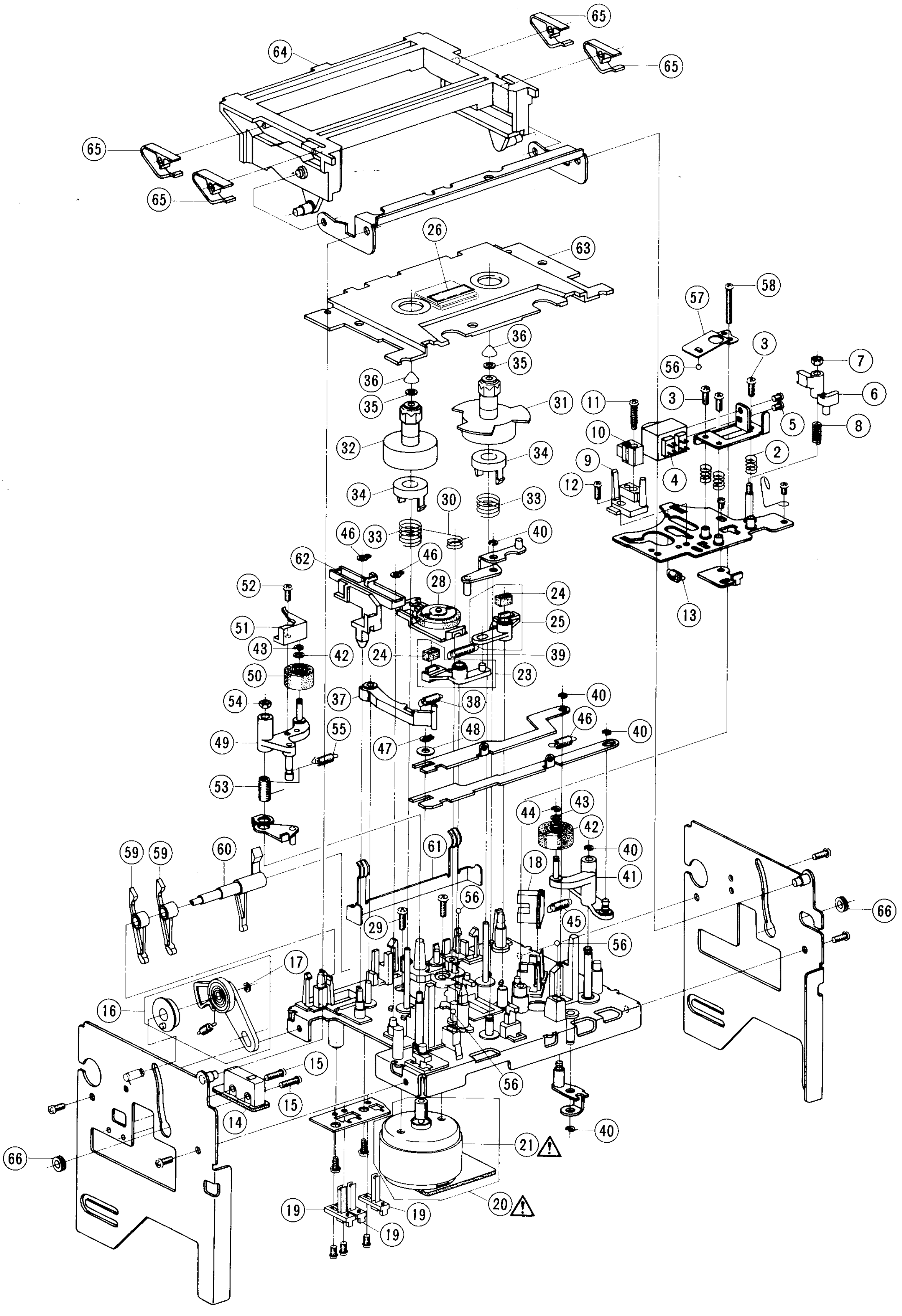
RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BH-T2032A080A	HEAD BLK GX-F71
2	BL-B336150	ARM PINCH ROLLER (A) PART
3	BL-B336202	ARM PINCH ROLLER (B) PART
4	BM-M3104A010A	⚠ MOTOR BLM-310
5	BM-B337064	⚠ MOTOR OPERATION (PULLEY) PART
6	BM-B336989	⚠ REEL MOTOR (PULLEY) PART
7	BR-342719	REEL TABLE (B) ASSY
8	BR-336606	REEL TABLE ASSY
9	BT-337224	⚠ TRANS POWER T-2032(A,C)
10	BT-337226	⚠ TRANS POWER T-2032(B,S)
11	BT-337225	⚠ TRANS POWER T-2032(E,V)
12	BT-337223	⚠ TRANS POWER T-2032(J)
13	BT-337222	⚠ TRANS POWER T-2032(U)
14	BZ-T2030A110A	QIL CLUTCH BLK GX-F51
15	EC-338341	C COMP 05-0034
16	EC-300034	C S-FIX H ECR-CA100H12 9.0-100
17	EC-337366	OSC CE CSB-600C 600 KHZ
18	EC-337017	OSC CE CSB800A 0.8MHZ
19	ED-308952	D GERMA V 1K34A-LR F07
20	ED-322982	D GERMA V 1S188FM-1-LR F07
21	ED-337016	D LED SG203DA GRN
22	ED-337010	D LED SLF-201C GRN
23	ED-337238	D LED SLP-162B RED
24	ED-337239	D LED SLP-262B GRN
25	ED-337014	D LED SR503D RED
26	ED-337195	D LED SY403DA YLW
27	ED-301911	D SILICON H DS448
28	ED-338229	D SILICON H DS448FB4 F12
29	ED-330987	D SILICON RB152 200/1.5A
30	ED-200468	D SILICON V DS448-VB6
31	ED-306109	D SILICON W03B 100/1.0A
32	ED-330622	D SILICON 1SR35-100VL 100/1.0A
33	ED-338561	D ZENER H HZ2 F10 B2
34	ED-337268	D ZENER H HZ5A-1
35	ED-337265	D ZENER H HZ6C-2
36	ED-302295	D ZENER H HZ7 C3
37	ED-306014	D ZENER H HZ9 C3
38	ED-337266	D ZENER H HZ9A-1
39	ED-338316	D ZENER V HZ22-1S1
40	ED-337259	D ZENER V HZ6A-3S1
41	ED-337260	D ZENER V HZ7B-2S1
42	EF-300588	⚠ FUSE EAWK T 250V 0.20A (E,V)(F6)
43	EF-695766	⚠ FUSE SEMKO T 250V 0.31A (B,S)(F1)
44	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (E,B,S,V)(F5)
45	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (E,B,S,V)(F3,4)
46	EF-308933	⚠ FUSE TSC A 250A 0.20A (J)(F6)
47	EF-327103	⚠ FUSE TSC A 250V 0.50A (U,J)(F5)
48	EF-306949	⚠ FUSE TSC A 250V 1.25A (U,J)(F3,4)
49	EF-315334	⚠ FUSE TSC 125V 0.25A (C,A)(F6)
50	EF-309390	⚠ FUSE TSC 125V 0.50A (C,A)(F5)
51	EF-309392	⚠ FUSE TSC 125V 1.25A (C,A)(F3,4)
52	EI-337568	HOLE ELEMENT DHD-H070
53	EI-337227	IC AN6870N
54	EI-330352	IC BA6109
55	EI-337357	IC HA12020
56	EI-322993	IC HD74107P
57	EI-336761	IC LA6458S
58	EI-337013	IC LB1290
59	EI-337009	IC LC4049
60	EI-337008	IC LC7800
61	EI-312179	IC LM1111B
62	EI-337006	IC LM6402H-063
63	EI-337228	IC M5218L0
64	EI-336994	IC M5230L
65	EI-337367	IC M58841-600P
66	EI-307644	IC NJM4556D
67	EI-213390	IC NJM4558D
68	EI-201940	IC NJM4558S
69	EI-337025	IC NJM4562D
70	EI-634140	IC SN74107N
71	EI-336992	IC μPC1043
72	EI-337237	IC μPD4050
73	EJ-283140	⚠ SOCKET SELECTER X-I7238 6P (U)
74	EL-337053	PL CORD 16.0V 80MA 400/400
75	EM-337221	IND FL FIP54AW11Y DOUBLE
76	EO-669273	COIL FIX 2 FL5R200 18μH
77	EO-337343	COIL OSC 1 2325-267 100MHZ
78	EO-315758	COIL TUN 1 100S-431 100KHZ
79	EO-336738	COIL TUN 1 102AK-004 19.8KHZ
80	ER-318647	⚠ R FUSE ERD2FC F10 1/4W 4R7J
81	ER-336775	FILTER DB D07001K 19KHZ
82	ER-336776	FILTER DB D07003K 100KHZ
83	ER-337376	R COMP 01-0399
84	ER-337374	R COMP 01-0400
85	ER-337631	R COMP 01-0449
86	ES-312234	⚠ SW PUSH SDL-1P 01-1 E (U,E,B,S,V)
87	ES-312235	⚠ SW PUSH SDL-1P 01-1 J (J)
88	ES-312238	⚠ SW PUSH SDL-1P 01-1 UC (C,A)
89	ES-336990	SW LEAF BSW-169 01-1 NO
90	ES-337344	SW MICRO SS-01-ED UC
91	ES-337257	SW PUSH SUN312A 3-THROW
92	ES-337197	SW ROTARY SBM1023N 2-02-03N
93	ES-337196	SW ROTARY SBM1024N 2-02-04N
94	ES-283072	SW SLIDE SSC22LP 2-02-02N
95	ES-336780	SW TACT KHH10902
96	ET-337359	PHOTO SENSOR MCD-7213P
97	ET-311977	PHOTO SENSOR SPI-201
98	ET-321016	TR FET 2SK117 GR,BL
99	ET-337235	TR FET 2SK170 BL,V
100	ET-337234	TR FET 2SK270 GR,BL
101	ET-200558	TR 2SA1115 E,F
102	ET-554657	TR 2SA733A P,Q
103	ET-337012	TR 2SA984K D,E
104	ET-337967	TR 2SA990 E,F
105	ET-337233	TR 2SA995 F,G
106	ET-322598	TR 2SB632K E,F
107	ET-328438	TR 2SB808-V F,G
108	ET-336997	TR 2SB808-V G,H
109	ET-375603	TR 2SC1061 B,C
110	ET-337258	TR 2SC1843 E,F
111	ET-337011	TR 2SC2274K D,E
112	ET-308977	TR 2SC2274K F
113	ET-328578	TR 2SC2320 E,F
114	ET-200505	TR 2SC2603 E,F
115	ET-200985	TR 2SC2603 F,G
116	ET-308141	TR 2SC2603 G
117	ET-639437	TR 2SC945L Q,P
118	ET-328437	TR 2SD1012-V F,G
119	ET-328868	TR 2SD1012-V G,H
120	ET-452531	TR 2SD313 E,F
121	ET-310148	TR 2SD612K E,F
122	ET-328440	TR 2SD863-V8 E,F
123	EV-315416	R S-FIX H D8 3P 103
124	EV-321637	R S-FIX H D8 3P 104
125	EV-314646	R S-FIX D8 3P 202
126	EV-315752	R S-FIX H D8 3P 204
127	EV-322416	R S-FIX H D8 3P 303
128	EV-315412	R S-FIX H D8 3P 502
129	EV-315413	R S-FIX H D8 3P 503
130	EV-483388	R S-FIX H SR19R 3P 0.15W 103
131	EV-483377	R S-FIX H SR19R 3P 0.15W 473
132	EV-306016	R S-RIX H TM8KV2-1S 3P 0.50W 101
133	EV-464253	R S-FIX V V8K1-1 3P 202
134	EV-337052	VR ROTARY 16L10×OR B103
135	EV-313538	VR ROTARY 16P20×1B B103
136	EV-337411	VR ROTARY 16P20×2U M503 N503
137	EV-337409	VR ROTARY 16P20×2V A503
138	HE-337372	HEAD E E-3621-PR C
139	HP-H2402A010A	HEAD COMBO PR4-5 C
140	MB-336026	BELT CAPSTAN
141	MB-336021	BELT OPERATION
142	MI-336025	FLYWHEEL (B)
143	MP-336153	PINCH ROLLER (A)
144	MP-336204	PINCH ROLLER (B)
145	TC-336002	HOLDER CAPSTAN (B)
146	TC-B336004A	HOLDER CAPSTAN (C-1) PART
147	TC-336605	WIND IDLER ASSY

When ordering parts, please quote Parts Number, Description and Model Number.

MECHA BLOCK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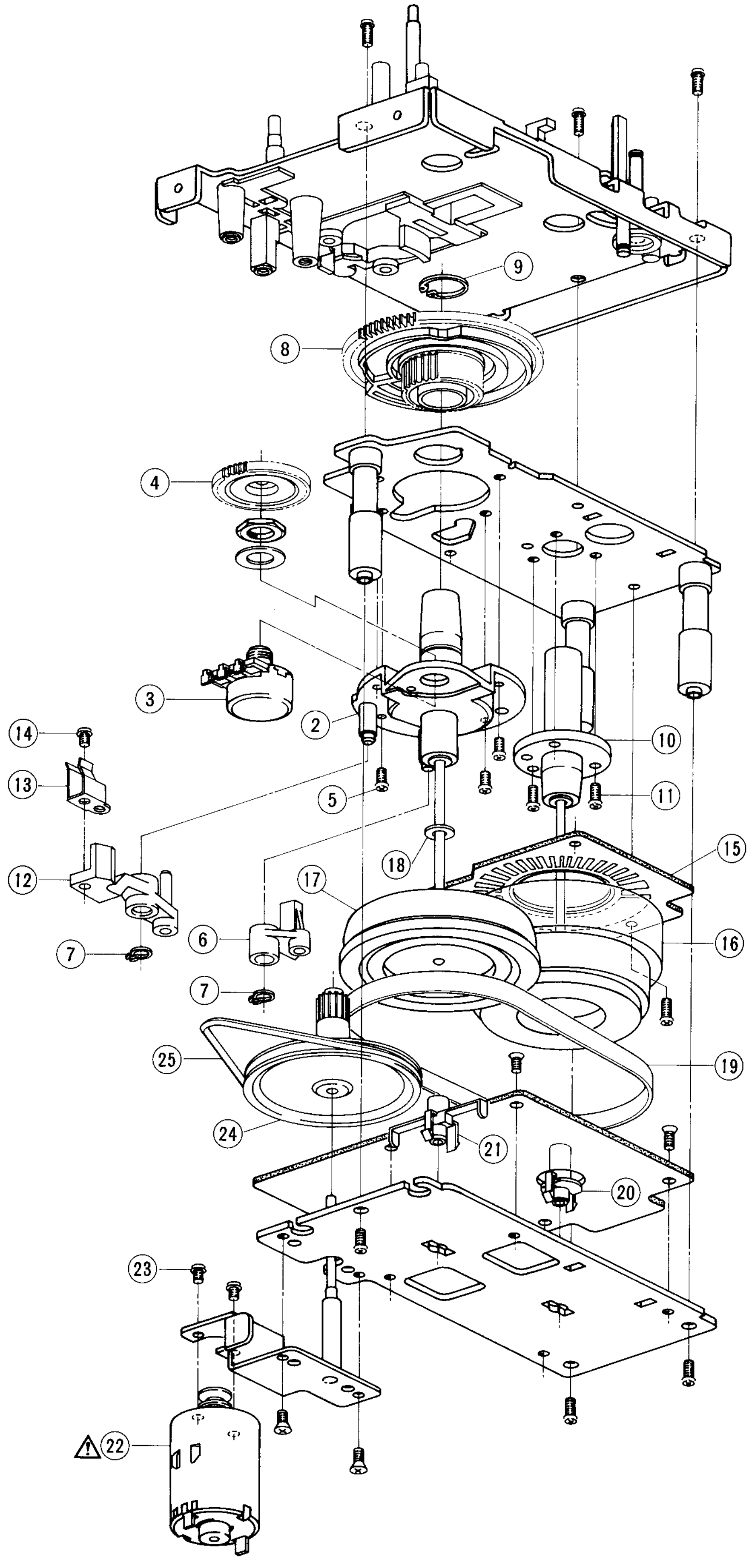
1. MECHA BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	HEAD BLOCK	
1-1x	BH-T2032A080A	HEAD BLK GX-F71
1-2	ZG-336127	SP PUSH HEAD
1-3	ZS-608095	PAN20×05STL CMT
1-4	HP-H2402A010A	HEAD COMBO PR4-5 C
1-5	ZS-477876	PAN20×03STL CMT
1-6	HZ-336129	GUIDE TAPE
1-7	ZW-618884	N20STL CMT 1
1-8	ZG-336130	SP PUSH GUIDE
1-9	HZ-336195	HOLDER HEAD E
1-10	HE-337372	HEAD E E-3621-PR C
1-11	ZS-342086	PLX PAN26×12STL CMT
1-12	ZS-499331	PAN23×05STL CMT
1-13	ZG-341972	SP PULL HEAD RETURN
	SW MICRO P.C BOARD BLOCK	
1-14	ES-337344	SW MICRO SS-01-ED UC (SW1)
	CHASSIS MECHA SIDE (L) BLOCK	
1-15	ZS-310337	PAN20×08STL CMT
1-16	BZ-T2030A110A	OIL CLUTCH BLK GX-F51
1-17	ZW-270088	RING E 190SUP CMT
	DETECTION P.C BOARD BLOCK	
1-18	ET-311977	PHOTO SENSOR SPI-201 (PH1)
	SW LEAF BLOCK	
1-19	ES-336990	SW LEAF BSW-169 01-1 NO (SW902,903,904)
	REEL MOTOR BLOCK	
1-20	BM-T2032A060A	⚠ REEL MOTOR BLK GX-F71
1-21	BM-B336989	⚠ REEL MOTOR (PULLEY) PART
1-22x	EO-669273	COIL FIX 2 FL5R200 18μH (L1,2)
	LEVER BRAKE (A) BLOCK	
1-23	BL-T2030A160A	LEVER BRAKE (A) BLK GX-F51
1-24	TC-336146	BRAKE RUBBER
	LEVER BRAKE (B) BLOCK	
1-25	BL-T2030A170A	LEVER BRAKE (B) BLK GX-F51
	D LED BLOCK	
1-26	ED-337010	D LED SLF-201C GRN (D901)
	MECHA BLOCK	
1-27x	BZ-T2032A050A	MECHA BLK GX-F71
1-28	TC-336605	WIND IDLER ASSY
1-29	ZS-563444	BID26×08STL CMT
1-30	ZG-336140	SP TORSION IDLER
1-31	BR-336606	REEL TABLE ASSY
1-32	BR-342719	REEL TABLE (B) ASSY
1-33	ZG-336141	SP PUSH BT
1-34	TC-336142	HOLDER BT SP
1-35	ZW-330073	PW21×040×020
1-36	MT-305793	REEL CAP
1-37	BL-B336196	LEVER BT PART
1-38	ZG-324331	SP T2-3.2/0.2-12.5 T2-041
1-39	ZG-312946	SP T1-3.2/0.29-16.0 T1-062
1-40	ZW-270088	RING E 190SUP CMT
1-41	BL-B336150	ARM PINCH ROLLER (A) PART
1-42	MP-336153	PINCH ROLLER (A)
1-43	ZW-381644	PW21×040×013PSL
1-44	ZW-356657	RING E 150SUP CMT
1-45	ZG-336175	SP PULL PINCH ROLLER (T)
1-46	ZG-321534	SP T2-3.2/0.29-12.5 T2-060
1-47	ZW-336603	RING GRIP 285SUP ACP
1-48	ZW-306464	PW31×070×050STL CMT
1-49	BL-B336202	ARM PINCH ROLLER (B) PART
1-50	MP-336204	PINCH ROLLER (B)
1-51	HZ-336205	GUIDE TAPE (B)
1-52	ZS-608095	PAN20×05STL CMT
1-53	ZG-336206	SP TORSION RETURN
1-54	ZW-618884	N20STL CMT 1
1-55	ZG-336208	SP PULL PINCH ROLLER (S)
1-56	MV-357208	BALL200STL
1-57	ZG-336157	SP PLATE HEAD HOLD
1-58	ZS-342002	ST PAN26×16STL CMT
1-59	ML-336158	LEVER DETECTION (B)
1-60	ML-336159	LEVER DETECTION (A)
1-61	ZG-336160	SP PLATE CASSETTE HOLDER (A)
1-62	TC-336161	SLIDE EJECT
1-63	BD-B336162A	LID DECORATION (A) PART
1-64	SP-336163	LID CASE
1-65	ZG-336615	SP PLATE CASSETTE HOLDER (B)
1-66	SZ-336166	COLLAR LID

When ordering parts, please quote Parts Number, Description and Model Number.

MOTOR BLOCK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2. MOTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BM-M3104A010A	⚠ MOTOR BLM-310
2-2	TC-B336004A	HOLDER CAPSTAN (C-1) PART
2-3	EV-337052	VR ROTARY 16L10xOR B103
2-4	MZ-336005	GEAR POTENTION
2-5	ZS-432843	PAN26x04STL CMT
2-6	BL-B336007	LEVER BRAKE CAM PART
2-7	ZW-336603	RING GRIP 285SUP ACP
2-8	MZ-336006	CAM WHEEL
2-9	ZW-336604	RING S839SUP ACP
2-10	TC-336002	HOLDER CAPSTAN (B)
2-11	ZS-479474	PAN26x05STL CMT
2-12	BL-B336009	LEVER EJECT CAM PART
2-13	ZG-336011	SP PLATE CAM LEVER
2-14	ZS-477876	PAN20x03STL CMT
2-15	EA-336012	PC FG
2-16	BF-B336024	FLYWHEEL (A) PART
2-17	MI-336025	FLYWHEEL (B)
2-18	ZW-309295	THRUST WASHER
2-19	MB-336026	BELT CAPSTAN
2-20	TC-336016	HOLDER THRUST (A)
2-21	TC-336027	HOLDER THRUST (B)
2-22	BM-B337064	⚠ MOTOR OPERATION (PULLEY) PART
2-23	ZS-477876	PAN20x03STL CMT
2-24	MR-336019	PULLEY OPERATE
2-25	MB-336021	BELT OPERATION

3. PRE AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BA-T2032A030A	PC PRE AMP BLK GX-F71(U) (U,J,C,A)
3-2	BA-T2032A030B	PC PRE AMP BLK GX-F71(E) (E,B,S,V)
3-3	BA-T2032A030C	PC PRE AMP BLK GX-F71-P(U) (U,J,C,A)
3-4	BA-T2032A030D	PC PRE AMP BLK GX-F71-P(E) (E,B,S,V)
	PRE AMP P.C BOARD	
3-IC1	EI-337025	IC NJM4562D
3-IC2to5	EI-312179	IC LM1111B
3-IC6	EI-336761	IC LA6458S
3-IC7	EI-337228	IC M5218L0
3-IC8	EI-307644	IC NJM4556D
3-IC9	EI-336761	IC LA6458S
3-IC10	EI-337228	IC M5218L0
3-IC11	EI-213390	IC NJM4558D
3-IC12	EI-336761	IC LA6458S
3-IC13	EI-634140	IC SN74107N
3-TR1to7	ET-200505	TR 2SC2603 E,F
3-TR8	ET-337233	TR 2SA995 F,G
3-TR9	ET-337234	TR FET 2SK270 GR,BL
3-TR10	ET-337258	TR 2SC1843 E,F
3-TR11	ET-337967	TR 2SA990 E,F
3-TR12	ET-337258	TR 2SC1843 E,F
3-TR13,14	ET-328578	TR 2SC2320 E,F
3-TR15	ET-337968	TR 2SA999 E,F
3-TR16	ET-328437	⚠ TR 2SD1012-V F,G
3-TR17	ET-328438	⚠ TR 2SB808-V F,G
3-TR18	ET-328578	TR 2SC2320 E,F
3-TR19to25	ET-200505	TR 2SC2603 E,F
3-TR26	ET-337235	TR FET 2SK170 BL,V
3-TR27	ET-200505	TR 2SC2603 E,F
3-TR28	ET-337235	TR FET 2SK170 BL,V
3-TR29,30	ET-200505	TR 2SC2603 E,F
3-TR1	ET-321016	TR FET 2SK117 GR,BL
3-TR32	ET-200505	TR 2SC2603 E,F
3-TR33	ET-200558	TR 2SA1115 E,F
3-TR34to36	ET-200505	TR 2SC2603 E,F
3-TR37	ET-308141	TR 2SC2603 G
3-TR38,39	ET-200505	TR 2SC2603 E,F
3-TR40,41	ET-200558	TR 2SA1115 E,F
3-TR42to44	ET-200505	TR 2SC2603 E,F
3-TR45,46	ET-200558	TR 2SA1115 E,F
3-TR47to50	ET-200505	TR 2SC2603 E,F
3-TR51	ET-200558	TR 2SA1115 E,F
3-TR52	ET-200505	TR 2SC2603 E,F
3-TR53	ET-200558	TR 2SA1115 E,F
3-D1	ED-308952	D GERMA V 1K34A-LR F07
3-D2,3	ED-200468	D SILICON V DS448-VB6
3-D4	ED-308952	D GERMA V 1K34A-LR F07
3-D5to7	ED-200468	D SILICON V DS448-VB6
3-D8,9	ED-322982	D GERMA V 1S188FM-1-LR F07
3-D10to23	ED-200468	D SILICON V DS448-VB6
3-D24,25	ED-330622	D SILICON 1SR35-100VL 100/1.0A
3-D26	ED-337259	D ZENER V HZ6A-3S1
3-D27	ED-200468	D SILICON V DS448-VB6
3-D28	ED-337260	D ZENER V HZ7B-2S1
3-D29to32	ED-200468	D SILICON V DS448-VB6
3-J23	EJ-337354	PIN J P 4P (U,J,C,A)
3-J23	BJ-337352	JACK PLATE GX-F71 (E,B,S,V)
3-SW1	ES-283072	SW SLIDE SSC22LP 2-02-02N (E,B,S,V)
3-SW2	ES-337257	SW PUSH SUN312A 3-THROW
3-VR1	EV-321637	R S-FIX H D8 3P 104
3-VR2	EV-337411	VR ROTARY 16P20x2U M503 N503
3-VR3	EV-337409	VR ROTARY 16P20x2V A503
3-VR4	EV-314646	R S-FIX H D8 3P 202
3-VR5	EV-306016	R S-FIX H TM8KV2-1S 3P 0.50W 101
3-VR6	EV-483388	R S-FIX H SR19R 3P 0.15W 103
3-VR7	EV-483377	R S-FIX H SR19R 3P 0.15W 473
3-VR8	EV-315412	R S-FIX H D8 3P 502
3-VR9	EV-314646	R S-FIX H D8 3P 202
3-VR10	EV-313538	VR ROTARY 16P20×1B B103
3-VR11	EV-315412	R S-FIX H D8 3P 502
3-VR12,13	EV-315416	R S-FIX H D8 3P 103
3-FL1	EO-336738	COIL TUN 1 102AK-004 19.8KHZ
3-FL2	ER-336776	FILTER DB D07003K 100KHZ
3-FL3	ER-336775	FILTER DB D07001K 19KHZ
3-FL4	ER-336776	FILTER DB D07003K 100KHZ
3-FL5	EO-336738	COIL TUN 1 102AK-004 19.8KHZ
3-R21	ER-314597	R MF H 1/4W 1302F
3-R22	ER-338108	R MF H 1/4W 4421F
3-R41	ER-314597	R MF H 1/4W 1302F
3-R79	ER-314597	R MF H 1/4W 1302F
3-R87	ER-314597	R MF H 1/4W 1302F
3-R88	ER-338108	R MF H 1/4W 4421F
3-C3	EC-337261	C EC V F05 NP NXA 1R0M 50DC
3-C5	EC-306438	C STY V F05 500 101J 50DC
3-C9	EC-337002	C EC V F05 NP NXA 100M 16DC
3-C10	EC-331183	C STY V SNP CQFS 102J 50DC
3-C11	EC-331183	C STY V SNP CQFS 102J 50DC
3-C12	EC-327097	C STY V F05 CQ09S 102J 50DC
3-C14	EC-337262	C EC V F05 NP NXA 4R7M 16DC
3-C16	EC-200948	C EC V F05 NP SM 1R0M 50DC
3-C26	EC-337262	C EC V F05 NP NXA 4R7M 16DC
3-C27	EC-331183	C STY V SNP CQFS 102J 50DC
3-C28,29	EC-327097	C STY V F05 CQ09S 102J 50DC
3-C40	EC-337966	C PP V APS 103J 100DC
3-C41	EC-337980	C PP V APS 512J 100DC
3-C46	EC-337261	C EC V F05 NXA 1R0M 50DC
3-C47	EC-337981	C PP V APS 562J 100DC
3-C49	EC-314990	C STY V SNP CQFS 101J 50DC
3-C52	EC-327097	C STY V F05 CQ09S 102J 50DC
3-C53	EC-337002	C EC V F05 NP NXA 100M 16DC
3-C55	EC-327097	C STY V F05 CQ09S 102J 50DC
3-C56	EC-337262	C EC V F05 NP NXA 4R7M 16DC
3-C57	EC-327097	C STY V F05 CQ09S 102J 50DC
3-C66	EC-337262	C EC V F05 NP NXA 4R7M 16DC
3-C67	EC-331183	C STY V SNP CQFS 102J 50DC
3-C68,69	EC-327097	C STY V F05 CQ09S 102J 50DC
3-C72	EC-200948	C EC V F05 NP SM 1R0M 50DC
3-C84	EC-306419	C STY V F05 500 681J 50DC
3-C86	EC-332052	C EC V F05 NP SM 4R7M 35DC
3-C89	EC-306987	C STY V F05 500 471J 50DC
3-C90	EC-337262	C EC V F05 NP NXA 4R7M 16DC
3-C92	EC-307793	C EC V F05 NP SM 220M 10DC
3-C99	EC-307684	C EC V F05 NP SM R47M 50DC
3-C114	EC-637143	C MC V FM 7R00D 500DC
3-C115	EC-333971	C EC V F05 NP SM 2R2M 50DC
	PHONE JACK P.C BOARD	
3-J24	EJ-336885	PHONE J 3P HLJ0607-023 6.3
3-J24	EJ-336886	PHONE J 3P HLJ0607-020 6.3(P)

When ordering parts, please quote Parts Number, Description and Model Number.

4. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	BA-T2032A090A	PC SYS CON BLK GX-F71(U)
4-2	BA-T2032A090B	PC SYS CON BLK GX-F71(J)
4-3	BA-T2032A090C	PC SYS CON BLK GX-F71(C) (C,A)
4-4	BA-T2032A090D	PC SYS CON BLK GX-F71(E) (E,V)
4-5	BA-T2032A090E	PC SYS CON BLK GX-F71(B) (B,S)
	SYS. CON. P.C BOARD	
4-IC1	EI-336994	IC M5230L
4-IC2	EI-336992	IC µPC1043
4-IC3,4	EI-337008	IC LC7800
4-IC5,6	EI-337013	IC LB1290
4-IC7	EI-337009	IC LC4049
4-IC8	EI-337006	IC LM6402H-063
4-IC9	EI-336761	IC LA6458S
4-IC10	EI-330352	IC BA6109
4-TR2	ET-639437	TR 2SC945L Q,P
4-TR4	ET-639437	TR 2SC945L Q,P
4-TR5	ET-328440	⚠ TR 2SD863-V8 E,F
4-TR6	ET-322598	⚠ TR 2SB632K E,F
4-TR7	ET-310148	⚠ TR 2SD612K E,F
4-TR8,9	ET-200505	TR 2SC2603 E,F
4-TR10to14	ET-328868	TR 2SD1012-V G,H
4-TR15	ET-200505	TR 2SC2603 E,F
4-TR16,17	ET-336997	TR 2SB808-V G,H
4-TR18	ET-452531	⚠ TR 2SD313 E,F
4-TR19,20	ET-328868	TR 2SD1012-V G,H
4-TR21to25	ET-200505	TR 2SC2603 E,F
4-TR26	ET-639437	⚠ TR 2SC945L Q,P
4-TR27	ET-554657	TR 2SA733A P,Q
4-TR28	ET-639437	⚠ TR 2SC945L Q,P
4-TR29	ET-200505	TR 2SC2603 E,F
4-TR30	ET-554657	TR 2SA733A P,Q
4-TR31,32	ET-336997	TR 2SB808-V G,H
4-TR33	ET-200505	TR 2SC2603 E,F
4-TR34	ET-639437	TR 2SC945L Q,P
4-D1,2	ED-306109	⚠ D SILICON W03B 100/1.0A
4-D3,4	ED-330622	⚠ D SILICON 1SR35-100VL 100/1.0A
4-D5	ED-337265	D ZENER H HZ6C-2
4-D6	ED-338316	D ZENER V HZ22-1S1
4-D7	ED-330987	⚠ D SILICON RB152 200/1.5A
4-D8	ED-200468	D SILICON V DS448-VB6
4-D9	ED-302295	D ZENER H HZ7 C3
4-D10to12	ED-200468	D SILICON V DS448-VB6
4-D14	ED-200468	D SILICON V DS448-VB6
4-D15	ED-337266	D ZENER H HZ9A-1
4-D16,17	ED-337268	D ZENER H HZ5A-1
4-D18	ED-200468	D SILICON V DS448-VB6
4-D20	ED-330622	D SILICON 1SR35-100VL 100/1.0A
4-D21	ED-306014	D ZENER H HZ9 C3
4-J25	EJ-337654	DIN J UC-0044 P 8P
4-SW1	ES-312234	⚠ SW PUSH SDL-1P 01-1 E (U,E,B,S,V)
4-SW1	ES-312235	⚠ SW PUSH SDL-1P 01-1 J (J)
4-SW1	ES-312238	⚠ SW PUSH SDL-1P 01-1 UC (C,A)
4-VR1	EV-315413	R S-FIX H D8 3P 503
4-VS1	EJ-283140	⚠ SOCKET SELECTER X-17238 6P (U)
4-X1	EC-337017	OSC CE CSB800A 0.8MHZ
4-SR1	ER-337631	R COMP 01-0449
4-SR2	ER-337374	R COMP 01-0400
4-SR3	ER-337376	R COMP 01-0399
4-SR4	EC-338341	C COMP 05-0034
4-R1	ER-669330	⚠ R CB H FS RDS 1/2W 102J
4-R3	ER-304667	⚠ R CB H FS RDS 1/2W 272J
4-R9	ER-337303	⚠ R CB H FS RDS 1/2W 472J
4-R14	ER-658034	⚠ R OMF H FS 2W 221J
4-R124	ER-337251	R MF H F10 1/4W 1820F
4-R125	ER-337253	R MF H F10 1/4W 1331F
4-R126	ER-337254	R MF H F10 1/4W 2261F
4-R127	ER-337255	R MF H F10 1/4W 2871F
4-R128	ER-337256	R MF H F10 1/4W 5361F
4-C1	EC-338396	⚠ C MMY V ECQEW 473M 250AC (U)
4-C1	EC-338400	⚠ C MMY V ECQ-E 473M 125DC (J)
4-C1	EC-338397	⚠ C MMY V ECQUE 223M 125AC (C,A)
4-C1	EC-338399	⚠ C MMY V ECQUF 223M 250AC (E,B,S,V)
	SW P.C BOARD	
4-SW1	ES-337196	SW ROTARY SBM1024N 2-02-04N
4-SW2	ES-337197	SW ROTARY SBM1023N 2-02-03N

5. TUNING P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1	BA-T2032A120A	PC TUNING BLK GX-F71
5-IC1	EI-337367	IC M58841-600P
5-IC2	EI-337013	IC LB1290
5-IC3	EI-337357	IC HA12020
5-IC4	EI-337228	IC M5218L0
5-IC5,6	EI-337237	IC µPD4050
5-IC7to9	EI-336761	IC LA6458S
5-TR1,2	ET-200985	TR 2SC2603 F,G
5-TR3	ET-328437	TR 2SD1012-V F,G
5-TR4to10	ET-200985	TR 2SC2603 F,G
5-TR11	ET-375603	⚠ TR 2SC1061 B,C
5-TR12to18	ET-200985	TR 2SC2603 F,G
5-TR19	ET-310148	⚠ TR 2SD612K E,F
5-TR20to26	ET-200985	TR 2SC2603 F,G
5-TR27	ET-310148	⚠ TR 2SD612K E,F
5-TR28,29	ET-200985	TR 2SC2603 F,G
5-TR30to33	ET-308977	TR 2SC2274K F
5-TR34to41	ET-200985	TR 2SC2603 F,G
5-TR42to45	ET-200558	TR 2SA1115 E,F
5-TR46	ET-200985	TR 2SC2603 F,G
5-TR47to49	ET-200505	TR 2SC2603 E,F
5-D1	ED-200468	D SILICON V DS448-VB6
5-D2to7	ED-301911	D SILICON H DS448
5-D8to13	ED-200468	D SILICON V DS448-VB6
5-VR1	EV-322416	R S-FIX H D8 3P 303
5-VR2	EV-315413	R S-FIX H D8 3P 503
5-VR3	EV-322416	R S-FIX H D8 3P 303
5-VR4,5	EV-315752	R S-FIX H D8 3P 204
5-VR6	EV-321637	R S-FIX H D8 3P 104
5-L1	EO-302464	COIL FIX 1 RX9P-333J 33.00MH J
5-T1,2	EO-337343	COIL OSC 1 2325-267 100MHZ
5-FL1	EO-315758	COIL TUN 1 100S-431 100KHZ
5-X1	EC-337366	OSC CE CSB-600C 600 KHZ
5-PH1	ET-337359	PHOTO SENSOR MCD-7213P
5-VC1	EC-300034	C S-FIX H ECR-CA100H12 9.0-100
5-FR1to4	ER-318647	⚠ R FUSE ERD2FC F10 1/4W 4R7J
5-C22	EC-332052	C EC V F05 NP SM 4R7M 35DC
5-C23	EC-317623	C STY V F05 500 102J 50DC
5-C37	EC-337249	C PP V F10 ECQ-F 222J 630DC
5-C39	EC-341496	C PP V APS 682J 100DC
5-C43	EC-306419	C STY V F05 500 681J 50DC
5-C44	EC-337250	C PP V F10 ECQ-F 102J 630DC
5-C46	EC-306419	C STY V F05 500 681J 50DC
5-C51	EC-305680	C STY V F05 500 151J 50DC
5-C66	EC-306987	C STY V F05 500 471J 50DC
5-C67	EC-316150	C STY V F05 500 821J 50DC

6. METER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-IC1	EI-337227	IC AN6870N
6-D1,2	ED-337195	D LED SY403DA YLW
6-D3	ED-337016	D LED SG203DA GRN
6-D4	ED-337014	D LED SR503D RED
6-D5	ED-337239	D LED SLP-262B GRN
6-D6	ED-337238	D LED SLP-162B RED
6-D7to10	ED-338229	D SILICON H DS448FB4 F12
6-IN1	EM-337221	IND FL FIP54AW11Y DOUBLE
6-SW1to17	ES-336780	SW TACT KHH10902

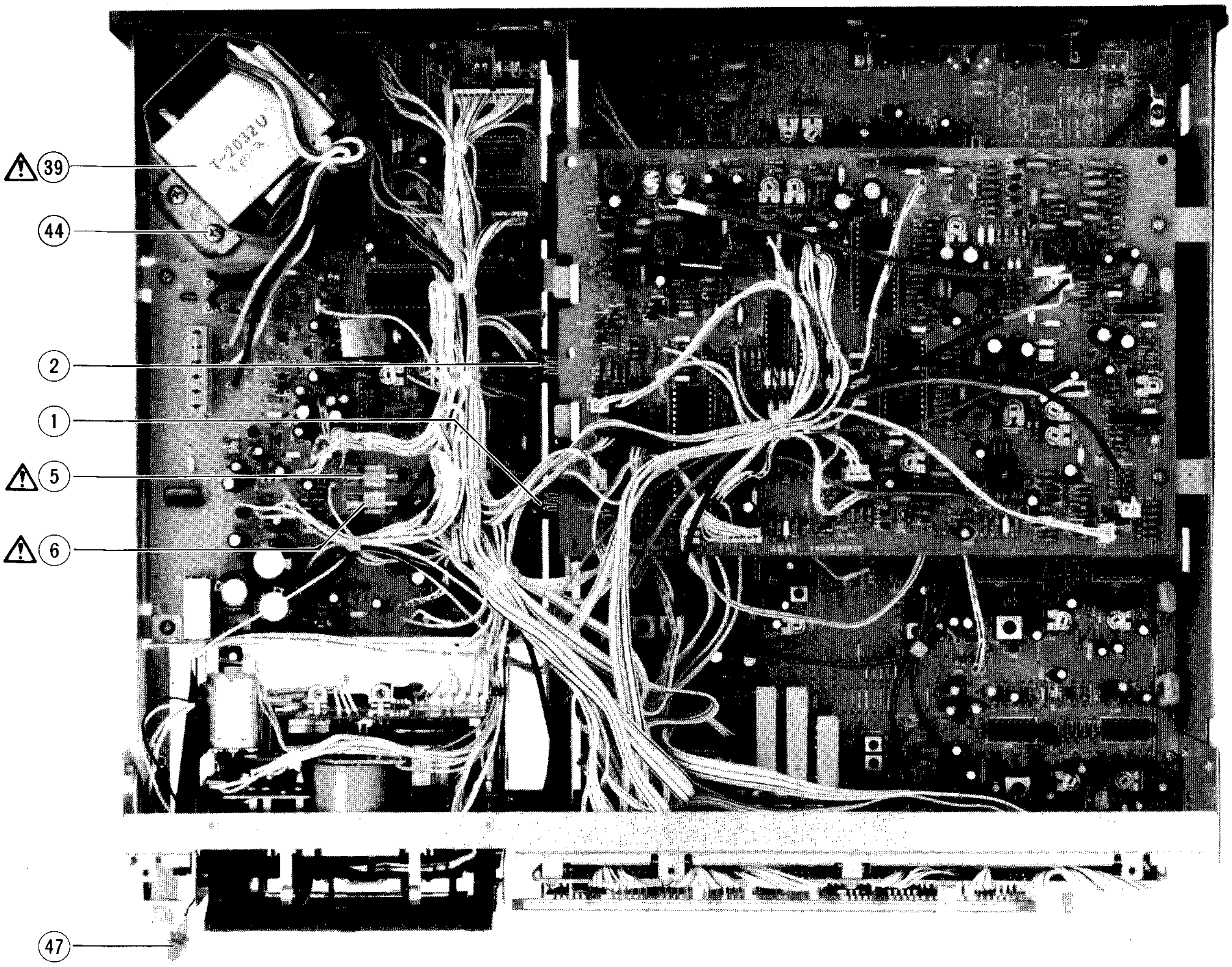
7. MOTOR P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
7-IC1	EI-201940	IC NJM4558S
7-IC3	EI-337568	HOLE ELEMENT DHD-H070
7-IC4	EI-337568	HOLE ELEMENT DHD-H070
7-TR1	ET-337011	TR 2SC2274K D,E
7-TR2	ET-337012	TR 2SA984K D,E
7-TR3	ET-337011	TR 2SC2274K D,E
7-TR4	ET-337012	TR 2SA984K D,E
7-D5	ED-338561	D ZENER H HZ2 F10 B2
7-VR1,2	EV-464253	R S-FIX V V8K1-1 3P 202

8. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	CHASSIS (C) BLOCK	
8-1	ET-310148	TR 2SD612K E,F (TR1)
8-2	ET-322598	TR 2SB632K E,F (TR2)
	ASSEMBLY BLOCK	
8-3	ZW-698308	RV NYL30x055 BL
8-4x	EF-327103	⚠ FUSE TSC A 250V 0.50A(F2)(U)
8-5	EF-306949	⚠ FUSE TSC A 250V 1.25A(F3)(U)
8-6	EF-306949	⚠ FUSE TSC A 250V 1.25A(F4)(U)
8-7x	EF-327103	⚠ FUSE TSC A 250V 0.50A(F5)(U)
8-8x	EF-327103	⚠ FUSE TSC A 250V 0.50A(F2)(J)
8-9x	EF-306949	⚠ FUSE TSC A 250V 1.25A(F3)(J)
8-10x	EF-306949	⚠ FUSE TSC A 250V 1.25A(F4)(J)
8-11x	EF-327103	⚠ FUSE TSC A 250V 0.50A(F5)(J)
8-12x	EF-308933	⚠ FUSE TSC A 250V 0.20A(F6)(J)
8-13x	EF-309390	⚠ FUSE TSC 125V 0.50A(F2)(C,A)
8-14x	EF-309392	⚠ FUSE TSC 125V 1.25A(F3)(C,A)
8-15x	EF-309392	⚠ FUSE TSC 125V 1.25A(F4)(C,A)
8-16x	EF-309390	⚠ FUSE TSC 125V 0.50A(F5)(C,A)
8-17x	EF-315334	⚠ FUSE TSC 125V 0.25A(F6)(C,A)
8-18x	EF-695766	⚠ FUSE SEMKO T 250V 0.31A (F1)(B,S)
8-19x	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F2)(E,B,S,V)
8-20x	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (F3)(E,B,S,V)
8-21x	EF-602550	⚠ FUSE SEMKO T 250V 1.25A (F4)(E,B,S,V)
8-22x	EF-593706	⚠ FUSE SEMKO T 250V 0.50A (F5)(E,B,S,V)
8-23x	EF-300588	⚠ FUSE EAWK T 250V 0.20A (F6)(E,V)
8-24	SP-336213A	PANEL REAR GX-F71(U) AS
8-25x	SP-336213B	PANEL REAR GX-F71 (J) AS
8-26x	SP-336213F	PANEL REAR GX-F71 (C) AS
8-27x	SP-336213C	PANEL REAR GX-F71 (A) AS
8-28x	SP-336213D	PANEL REAR GX-F71 (E,V) AS
8-29x	SP-336213E	PANEL REAR GX-F71 (B,S) AS
8-30	ZS-447761	T2BR30x06STL BNI
8-31	EW-306428	⚠ AC CORD 2 CORES KP-205A, VFF J (U)
8-32x	EW-306427	⚠ AC CORD 2 CORES KP-211, VFF J (J)
8-33x	EW-305691	⚠ AC CORD 2 CORES KP-8, SPT-1 UC (C,A)
8-34x	EW-313882	⚠ AC CORD 2 CORES KP-419C, LTCE-2F E (E,V)
8-35x	EW-313884	⚠ AC CORD 2 CORES GTBS-2F 24/0.20x2 B (B)
8-36x	EW-201515	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
8-37	SZ-631945	STRAIN RELIEF SR-4N-4 (U,J,C,A,E,S,V)
8-38x	EJ-692908	STRAIN RELIEF SR-5N-4 (B)
8-39	BT-337222	⚠ TRANS POWER T-2032 (U)
8-40x	BT-337223	⚠ TRANS POWER T-2032 (J)
8-41x	BT-337224	⚠ TRANS POWER T-2032 (A,C)
8-42x	BT-337225	⚠ TRANS POWER T-2032 (E,V)
8-43x	BT-337226	⚠ TRANS POWER T-2032 (B,S)
8-44	ZS-301398	ST BID40x08STL CMT
8-45x	SP-336215	COVER BOTTOM
8-46x	ZS-325495	T2BR30x06STL CMT
8-47	EL-337053	PL CORD 16.0V 80MA 400/400
8-48	SA-336217	FOOT
8-49x	SW-305013	RV POP32 (A)

ASSEMBLY BLOCK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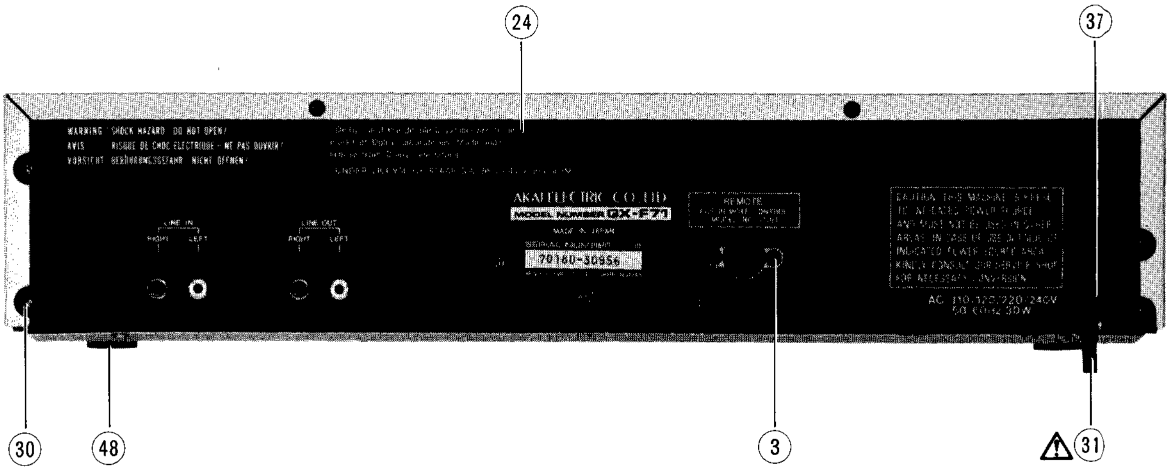
T-2032U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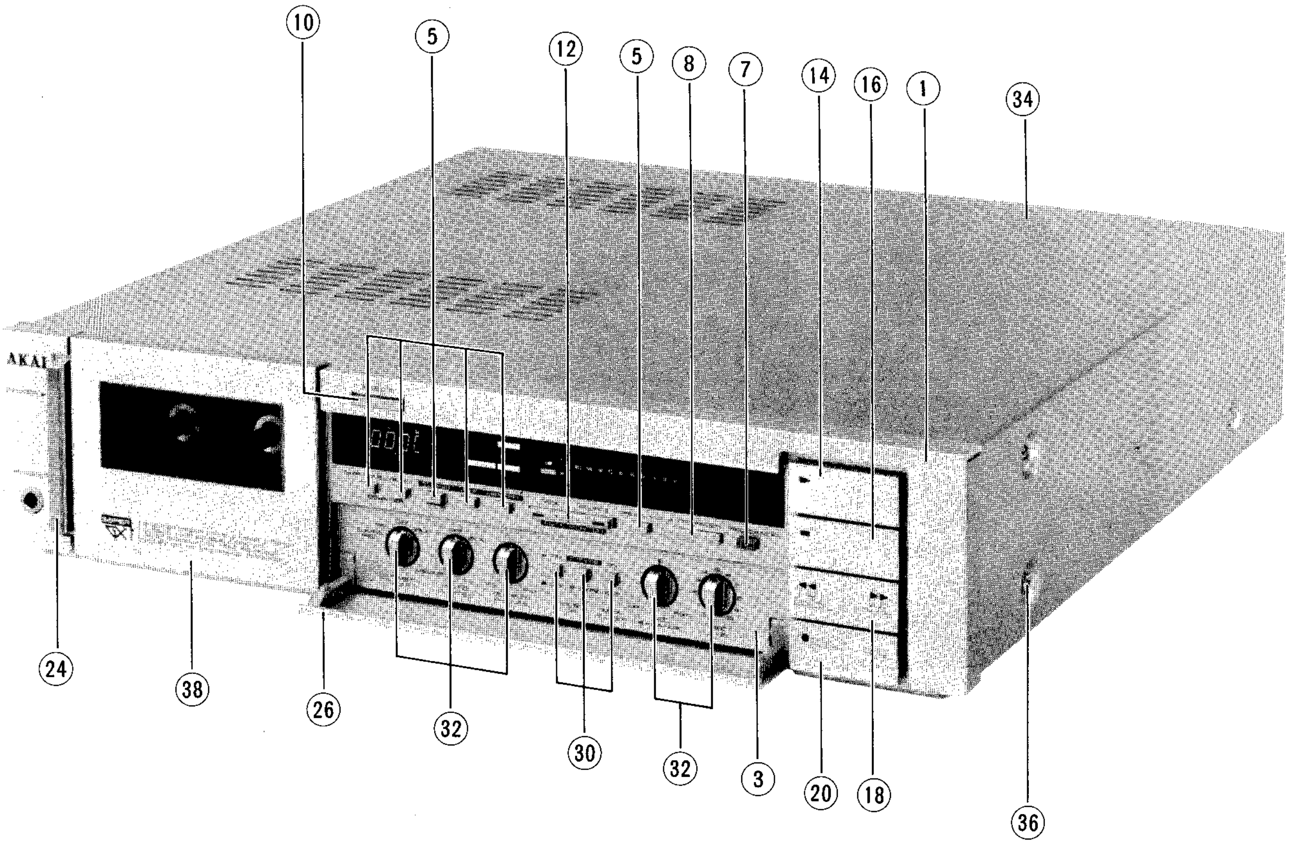
37
WARNING : SHOCK HAZARD DO NOT OPEN!
AVIS : RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR!
VORSICHT : BERÜHRUNGSGEFAHR NICHT ÖFFNEN!
LINE IN
RIGHT
LEFT
LINE OUT
RIGHT
LEFT
AKAI ELECTRIC CO., LTD
MODEL NUMBER GX-F71
MADE IN JAPAN
70180-30956
REMOTE
AC 110-120/220-240V
50/60Hz 30W
30
48
3
⚠31

FINAL ASSEMBLY BLOCK



9. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	FRONT PANEL BLOCK	
9-1	SP-336223A	PANEL FRONT
9-2x	SP-336223B	PANEL FRONT-P
9-3	BD-B336224A	PANEL SUB (C) PART
9-4x	BD-B336224B	PANEL SUB (C)-P PART
9-5	SK-336237A	KNOB (A-1)
9-6x	SK-336237C	KNOB (A)-P
9-7	SK-336237B	KNOB (A-2)
9-8	SK-336239A	KNOB (B)
9-9x	SK-336239B	KNOB (B)-P
9-10	SK-336240A	KNOB (C)
9-11x	SK-336240B	KNOB (C)-P
9-12	SK-B336232A	KNOB CAP SEESAW PART
9-13x	SK-B336232B	KNOB CAP SEESAW-P PART
9-14	SK-B336241A	KNOB OPERATE (A) PART
9-15x	SK-B336241B	KNOB OPERATE (A)-P PART
9-16	SK-B336242A	KNOB OPERATE (B) PART
9-17x	SK-B336242B	KNOB OPERATE (B)-P PART
9-18	SK-B336243A	KNOB OPERATE (C-1) PART
9-19x	SK-B336243B	KNOB OPERATE (C-1)-P PART
9-20	SK-B336244A	KNOB OPERATE (D) PART
9-21x	BD-B336244B	KNOB OPERATE (D)-P PART
9-22x	SP-336236C	PANEL SUB (B-2)
9-23x	SP-336236D	PANEL SUB (B-2)-P
9-24	SK-336251	KNOB POWER
9-25x	SK-336252	KNOB SPACER
9-26	BD-T2032A150A	PANEL DOOR BLK GX-F71
9-27x	BD-T2032A150B	PANEL DOOR BLK GX-F71-P
9-28x	TC-336228A	HINGE
9-29x	TC-336228B	HINGE-P
	FINAL ASSEMBLY BLOCK	
9-30	SK-336230A	KNOB PUSH
9-31x	SK-336230B	KNOB PUSH-P
9-32	SK-336229A	KNOB ROTARY
9-33x	SK-336229B	KNOB ROTARY-P
9-34	SP-336233A	COVER UPPER
9-35x	SP-336233B	COVER UPPER-P
9-36	ZS-322570	ST BID40x08STL NI3
9-37x	ZS-322580	ST BID40x08STL BNI
9-38	BD-B336235A2	LID PANEL PART
9-39x	BD-B336235B2	LID PANEL-P PART

INDEX

1. MODEL GX-F31

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BA-T2029A030D	3-4
BA-T2029A040A	4-1
BA-T2029A040B	4-2
BA-T2029A040C	4-3
BA-T2029A040D	4-4
BA-T2029A040E	4-5
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BD-B336134B	8-4x
BD-B336162B	1-50
BD-B336235A	8-30
BD-B336235B	8-31x
BD-B336244B	8-17
BF-B336013	2-16
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BL-B336007	2-6
BL-B336009	2-12
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BL-T2030A170A	1-24
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BM-T2030A120A	1-19
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BT-337247	7-4x
BT-337248	7-5x
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EC-331410	4-C8
EC-331631	3-C63
EC-337005	3-C92
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ED-337289	4-D12
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ED-338413	3-D22
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EF-602550	7-39x
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SK-B336243D	8-15x
SK-B336244A	8-16
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SK-336240B	8-9x
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SP-336190M	7-19x
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SP-336236A	8-18x
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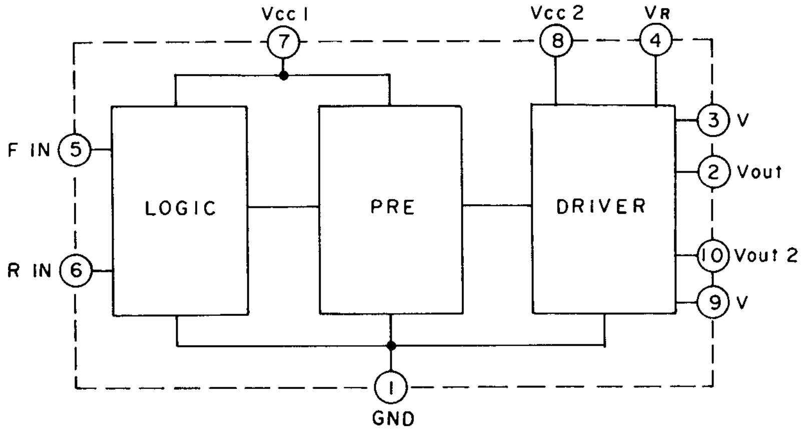
EW-305691	8-33x
EW-306427	8-32x
EW-306428	8-31
EW-313882	8-34x
EW-313884	8-35x
HE-337372	1-10
HP-H2402A010A	1-4
HZ-336129	1-6
HZ-336195	1-9
HZ-336205	1-51
MB-336021	2-25
MB-336026	2-19
MI-336025	2-17
ML-336158	1-59
ML-336159	1-60
MP-336153	1-42
MP-336204	1-50
MR-336019	2-24
MT-305793	1-36
MV-357208	1-56
MZ-336005	2-4
MZ-336006	2-8
SA-336217	8-48
SK-B336232A	9-12
SK-B336232B	9-13x
SK-B336241A	9-14
SK-B336241B	9-15x
SK-B336242A	9-16
SK-B336242B	9-17x
SK-B336243A	9-18
SK-B336243B	9-19x
SK-B336244A	9-20
SK-336229A	9-32
SK-336229B	9-33x
SK-336230A	9-30
SK-336230B	9-31x
SK-336237A	9-5
SK-336237B	9-7
SK-336237C	9-6x
SK-336239A	9-8
SK-336239B	9-9x
SK-336240A	9-10
SK-336240B	9-11x
SK-336251	9-24
SK-336252	9-25x
SP-336163	1-64
SP-336213A	8-24
SP-336213B	8-25x
SP-336213C	8-27x
SP-336213D	8-28x
SP-336213E	8-29x
SP-336213F	8-26x
SP-336215	8-45x
SP-336223A	9-1
SP-336223B	9-2x
SP-336233A	9-34
SP-336233B	9-35x
SP-336236C	9-22x
SP-336236D	9-23x
SZ-336166	1-66
SZ-631945	8-37
TC-B336004A	2-2
TC-336002	2-10
TC-336016	2-20
TC-336027	2-21
TC-336142	1-34
TC-336146	1-24
TC-336161	1-62
TC-336228A	9-28x
TC-336228B	9-29x
TC-336605	1-28
ZG-312946	1-39
ZG-321534	1-46
ZG-324331	1-38
ZG-336011	2-13
ZG-336127	1-2
ZG-336130	1-8
ZG-336140	1-30
ZG-336141	1-33
ZG-336157	1-57
ZG-336160	1-61
ZG-336175	1-45
ZG-336206	1-53
ZG-336208	1-55
ZG-336615	1-65
ZG-341972	1-13
ZS-301398	8-44
ZS-310337	1-15
ZS-322570	9-36
ZS-322580	9-37x
ZS-325495	8-46x
ZS-342002	1-58
ZS-342086	1-11
ZS-432843	2-5
ZS-447761	8-30
ZS-477876	1-5
ZS-477876	2-14
ZS-477876	2-23
ZS-479474	2-11
ZS-499331	1-12
ZS-563444	1-29
ZS-608095	1-52
ZS-608095	1-3
ZW-270088	1-17
ZW-270088	1-40
ZW-305013	8-49x
ZW-306464	1-48
ZW-309295	2-18
ZW-330073	1-35
ZW-336603	1-47
ZW-336603	2-7
ZW-336604	2-9
ZW-356657	1-44
ZW-381644	1-43
ZW-618884	1-54
ZW-618884	1-7
ZW-698308	8-3

SECTION 6

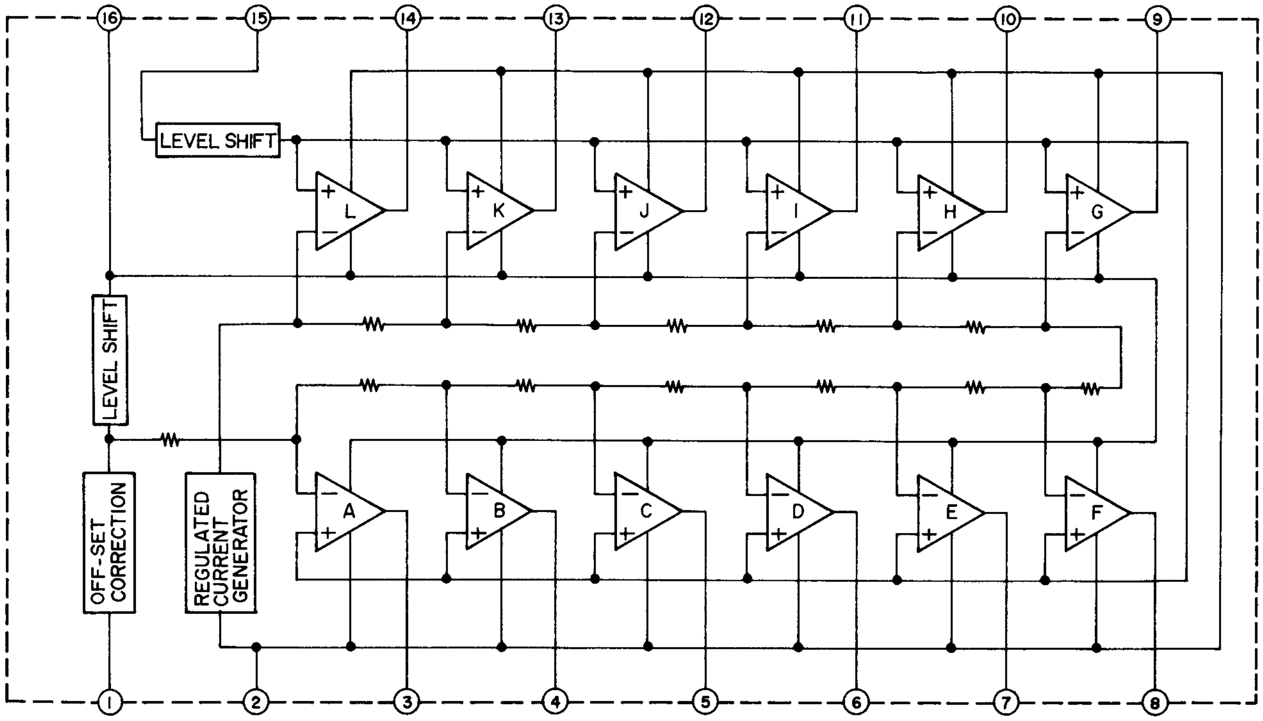
SCHEMATIC DIAGRAM

1. SCHEMATIC DIAGRAM OF ICs
2. GX-F31 POWER & SYSCON NO. 2-1 1640824A SCHEMATIC DIAGRAM
3. GX-F31 AMP NO. 2-2 1640825A SCHEMATIC DIAGRAM
4. GX-F51 POWER & SYSCON NO. 3-1 1640826A SCHEMATIC DIAGRAM
5. GX-F51 AMP NO. 3-2 1640827A SCHEMATIC DIAGRAM
6. GX-F51 TUNING NO. 3-3 1640828A SCHEMATIC DIAGRAM
7. GX-F71 POWER & SYSCON NO. 3-1 1640830A SCHEMATIC DIAGRAM
8. GX-F71 AMP NO. 3-2 1640831A SCHEMATIC DIAGRAM
9. GX-F71 TUNING NO. 3-3 1640832A SCHEMATIC DIAGRAM

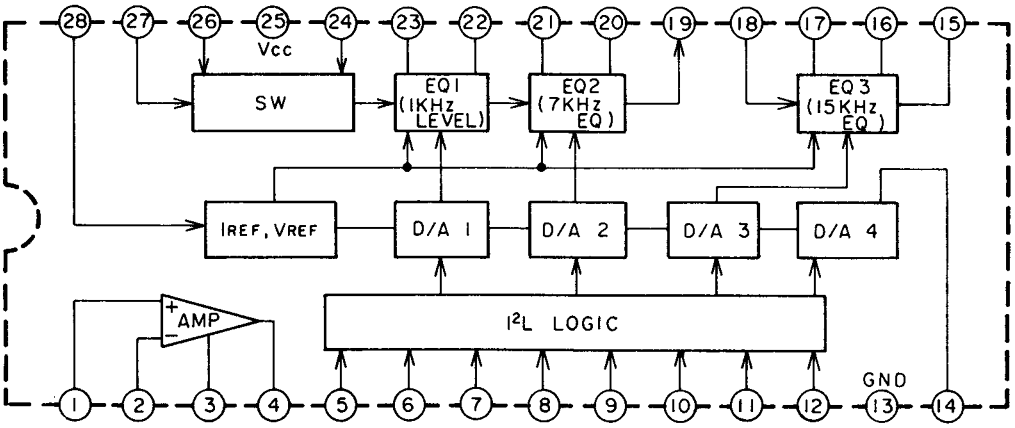
BA6109


Vcc 1
Vcc 2
VR
7
8
4
F IN
5
R IN
6
LOGIC
PRE
DRIVER
3
V
2
Vout
10
Vout 2
9
V
1
GND

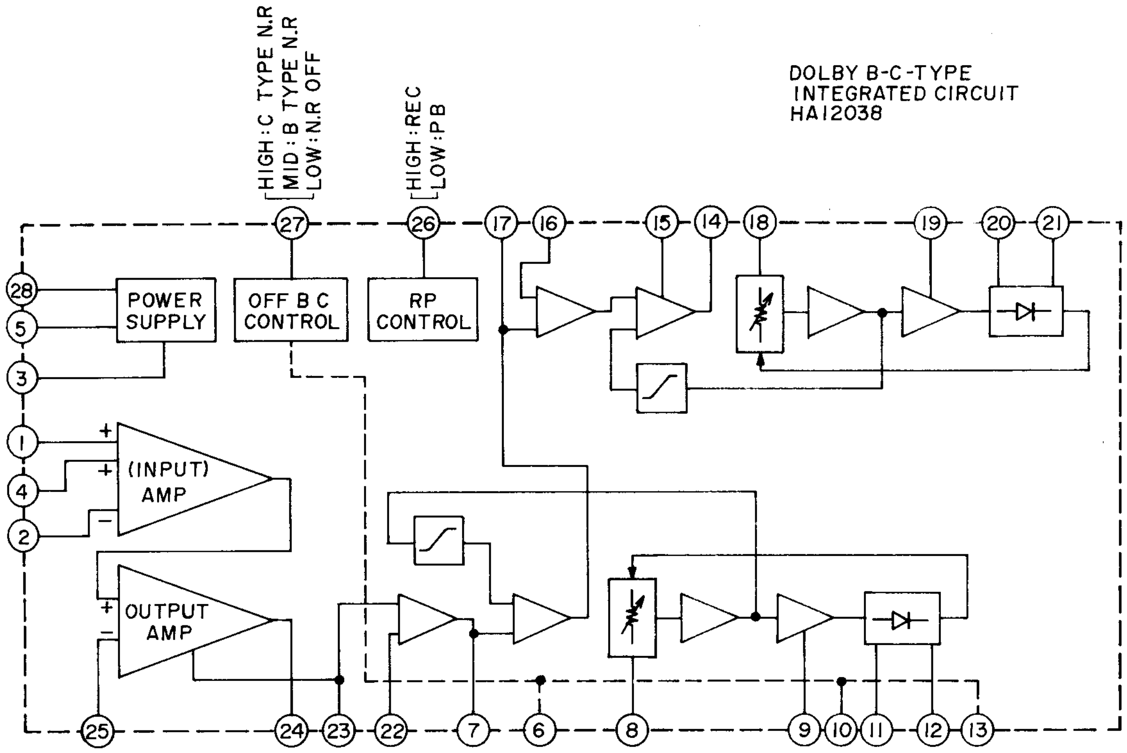
HA12019


16
15
14
13
12
11
10
9
LEVEL SHIFT
L
K
J
I
H
G
LEVEL SHIFT
A
B
C
D
E
F
OFF-SET CORRECTION
REGULATED CURRENT GENERATOR
1
2
3
4
5
6
7
8

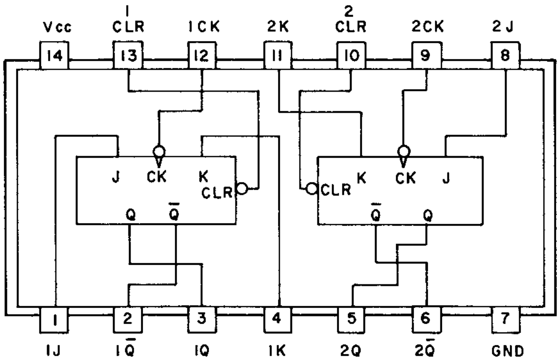
HA12020

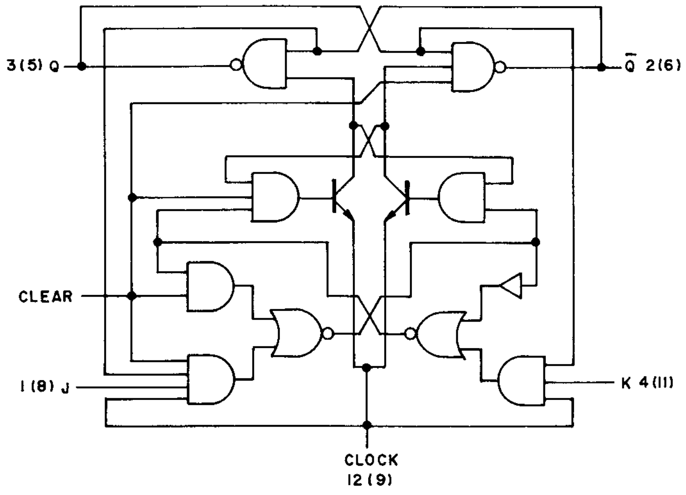

28
27
26
25
24
23
22
21
20
19
18
17
16
15
Vcc
SW
EQ1 (1KHz LEVEL)
EQ2 (7KHz EQ)
EQ3 (15KHz EQ)
IREF, VREF
D/A 1
D/A 2
D/A 3
D/A 4
AMP
I²L LOGIC
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14

HA12038

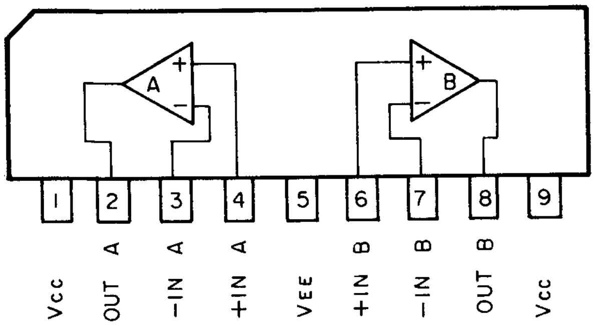

HIGH : C TYPE N.R
MID : B TYPE N.R
LOW : N.R OFF
HIGH : REC
LOW : PB
DOLBY B-C-TYPE
INTEGRATED CIRCUIT
HA12038
POWER SUPPLY
OFF B C CONTROL
RP CONTROL
(INPUT) AMP
OUTPUT AMP
+
+
−
+
−
27
26
17
16
15
14
18
19
20
21
28
5
3
1
4
2
25
24
23
22
7
6
8
9
10
11
12
13

HD74107P

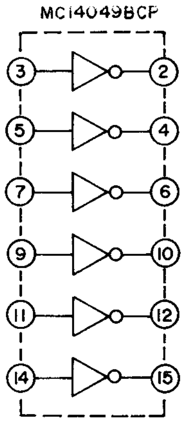

Vcc
1 CLR
1CK
2K
2 CLR
2CK
2J
14
13
12
11
10
9
8
J
CK
K
CLR
Q
Q̄
CLR
K
CK
J
Q̄
Q
1
2
3
4
5
6
7
1J
1Q̄
1Q
1K
2Q
2Q̄
GND


3(5) Q
Q̄ 2(6)
CLEAR
1(8) J
K 4(11)
CLOCK
12(9)

LA6458S, TA75558S

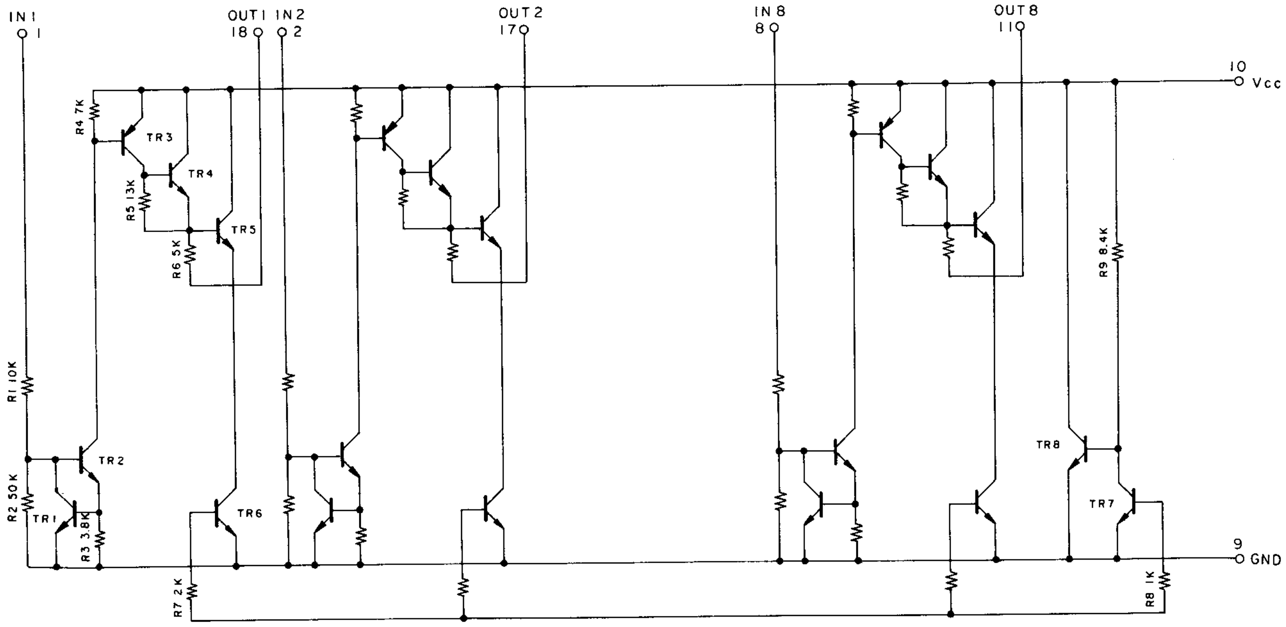

A
B
+
−
1
2
3
4
5
6
7
8
9
Vcc
OUT A
−IN A
+IN A
VEE
+IN B
−IN B
OUT B
Vcc

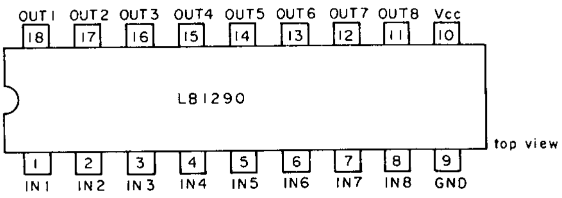
LC4049

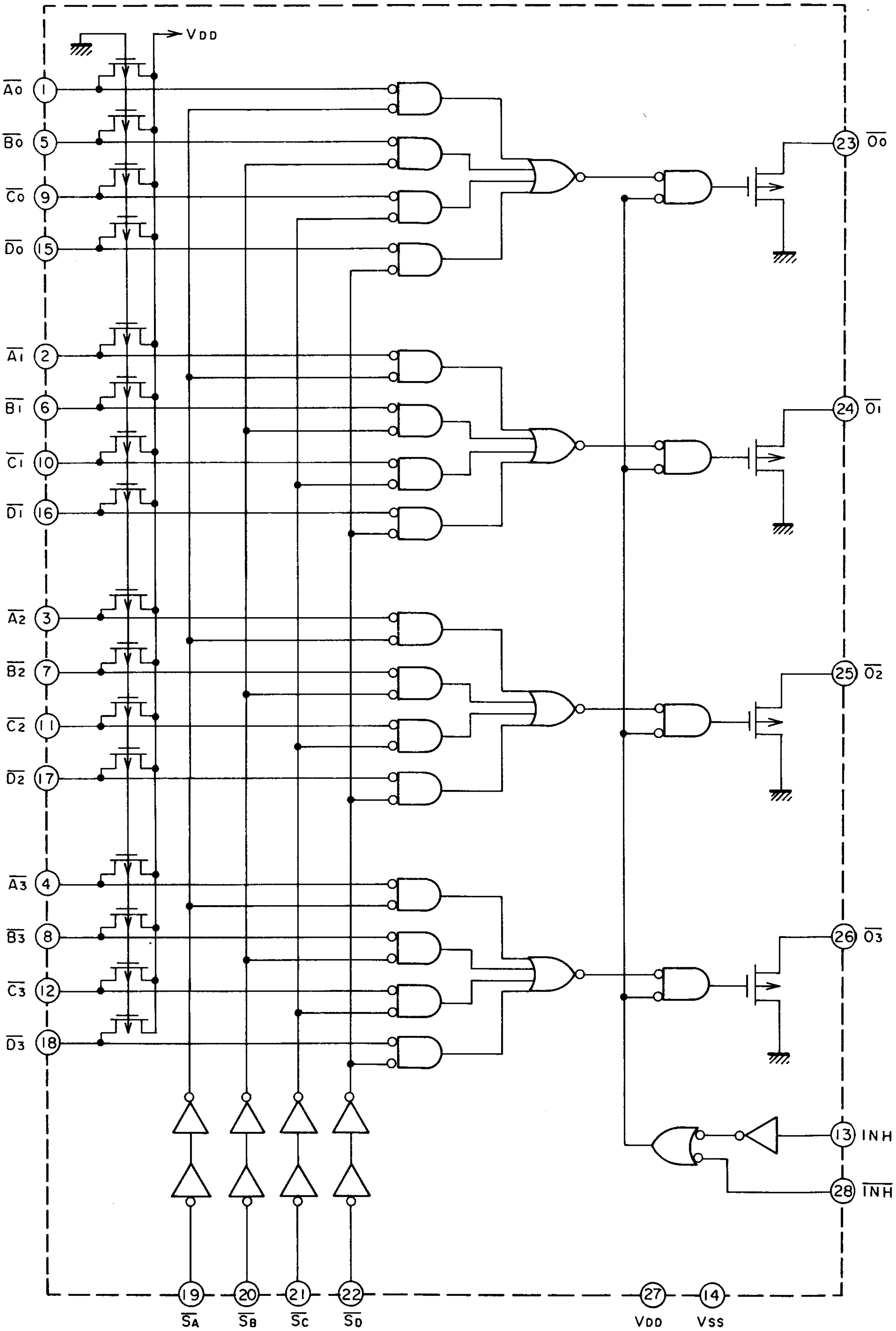

MC14049BCP
3
2
5
4
7
6
9
10
11
12
14
15

NC= Pin 13.16
VSS= Pin 8

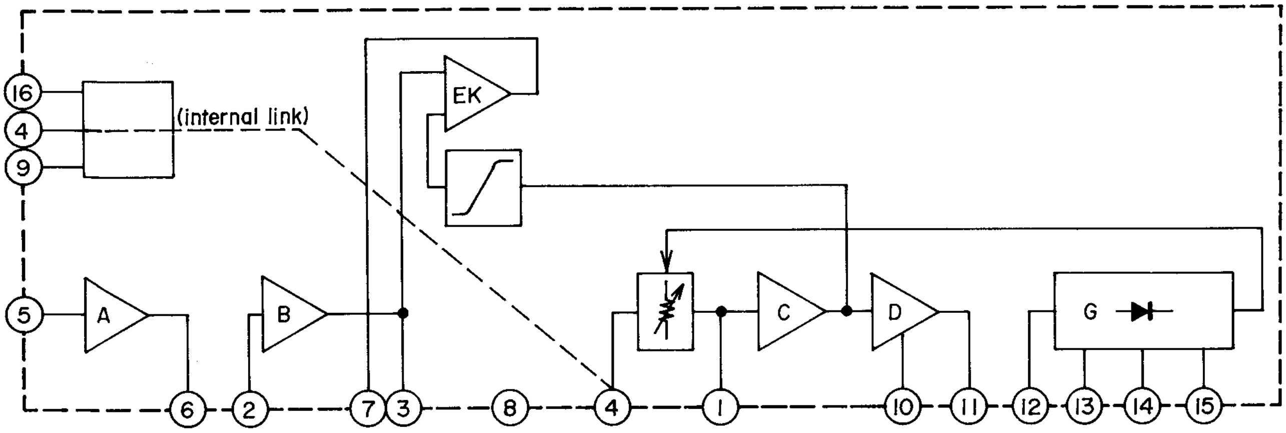
LB1290


IN 1
1
OUT 1
18
IN 2
2
OUT 2
17
IN 8
8
OUT 8
11
10
Vcc
9
GND
R4 7K
TR3
TR4
R5 13K
TR5
R6 5K
R1 10K
TR2
R2 50K
TR1
R3 3.8K
TR6
R7 2K
TR8
TR7
R9 8.4K
R8 1K

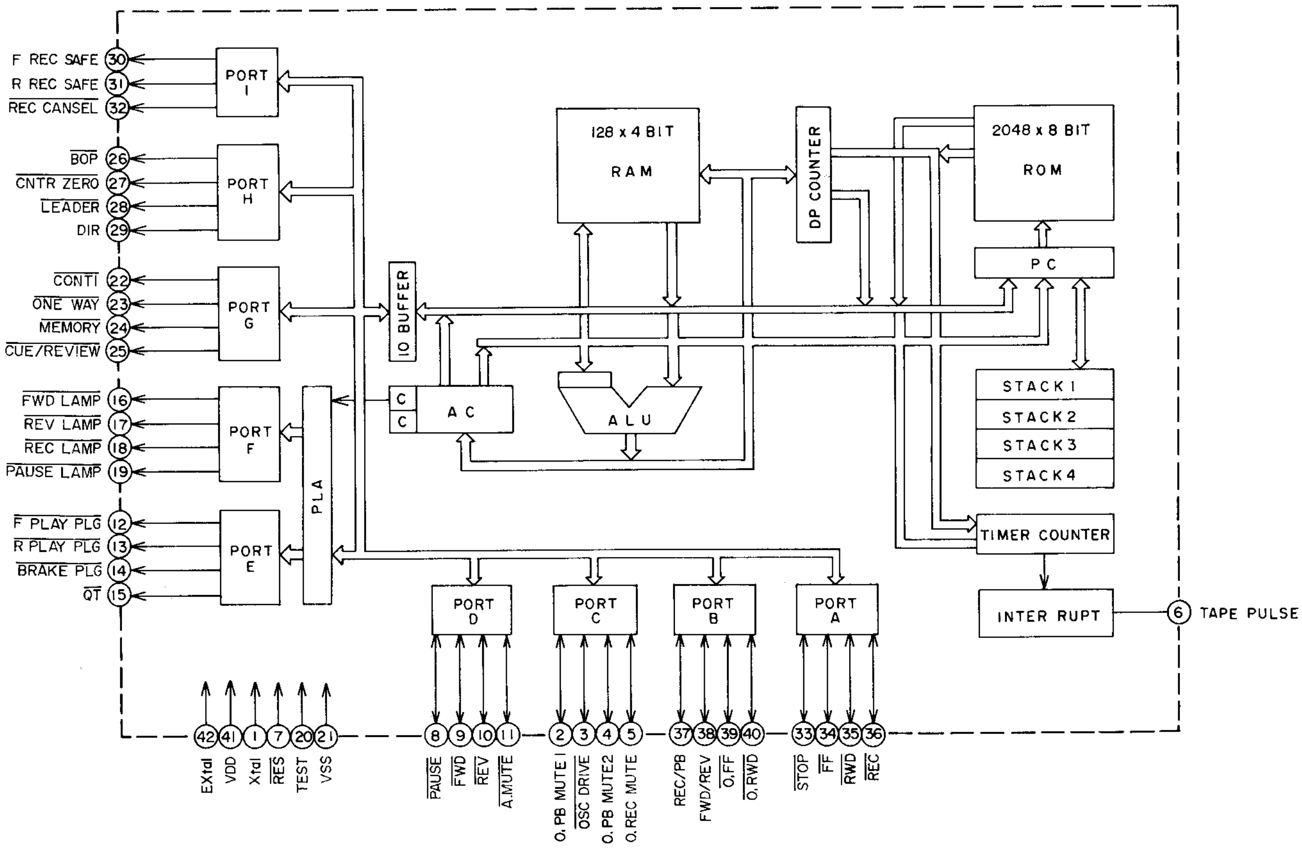

OUT 1
OUT 2
OUT 3
OUT 4
OUT 5
OUT 6
OUT 7
OUT 8
Vcc
18
17
16
15
14
13
12
11
10
LB1290
top view
1
2
3
4
5
6
7
8
9
IN 1
IN 2
IN 3
IN 4
IN 5
IN 6
IN 7
IN 8
GND


VDD
A̅0 1
B̅0 5
C̅0 9
D̅0 15
A̅1 2
B̅1 6
C̅1 10
D̅1 16
A̅2 3
B̅2 7
C̅2 11
D̅2 17
A̅3 4
B̅3 8
C̅3 12
D̅3 18
23 O̅0
24 O̅1
25 O̅2
26 O̅3
13 INH
28 I̅N̅H̅
19 S̅A
20 S̅B
21 S̅C
22 S̅D
27 VDD
14 VSS

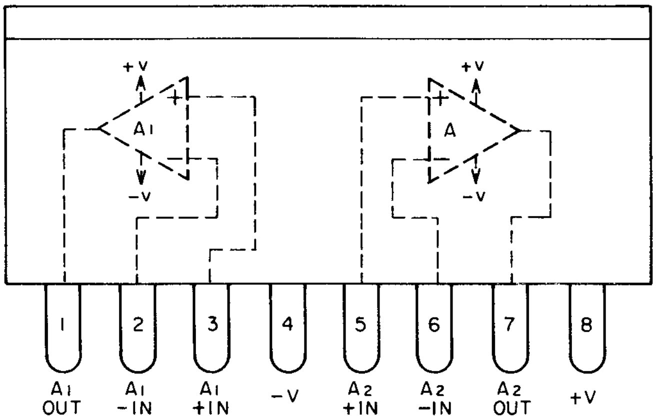
LM1111B


16
4
9
(internal link)
EK
5
A
B
C
D
G
6
2
7
3
8
4
1
10
11
12
13
14
15

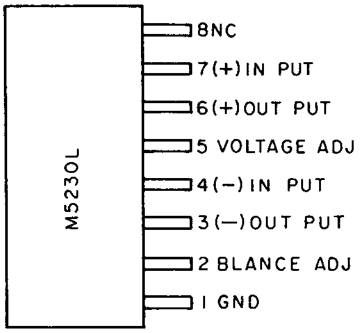
LM6402

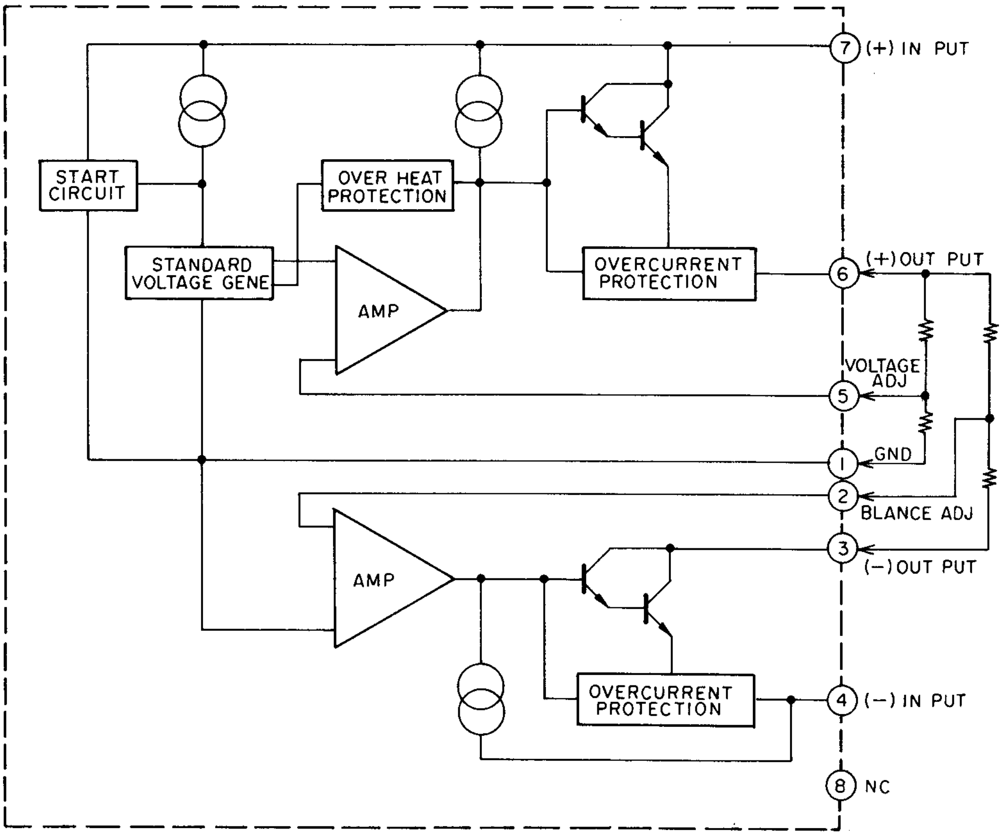

F REC SAFE 30
R REC SAFE 31
REC CANSEL 32
PORT I
BOP 26
CNTR ZERO 27
LEADER 28
DIR 29
PORT H
CONTI 22
ONE WAY 23
MEMORY 24
CUE/REVIEW 25
PORT G
FWD LAMP 16
REV LAMP 17
REC LAMP 18
PAUSE LAMP 19
PORT F
F PLAY PLG 12
R PLAY PLG 13
BRAKE PLG 14
QT 15
PORT E
PLA
IO BUFFER
C
C
A C
128 x 4 BIT
RAM
ALU
DP COUNTER
2048 x 8 BIT
ROM
P C
STACK 1
STACK 2
STACK 3
STACK 4
TIMER COUNTER
INTER RUPT
6 TAPE PULSE
PORT D
PORT C
PORT B
PORT A
42 EXtal
41 VDD
1 Xtal
7 RES
20 TEST
21 VSS
8 PAUSE
9 FWD
10 REV
11 A.MUTE
2 O.PB MUTE 1
3 OSC DRIVE
4 O.PB MUTE 2
5 O.REC MUTE
37 REC/PB
38 FWD/REV
39 O.FF
40 O.RWD
33 STOP
34 FF
35 RWD
36 REC

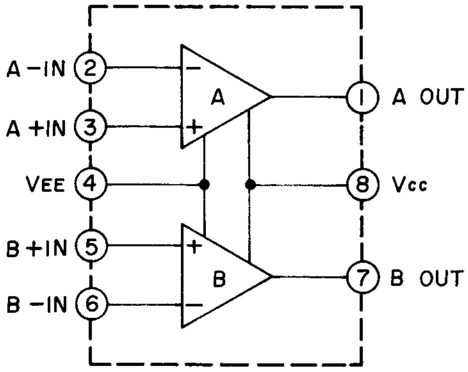
M5218LS

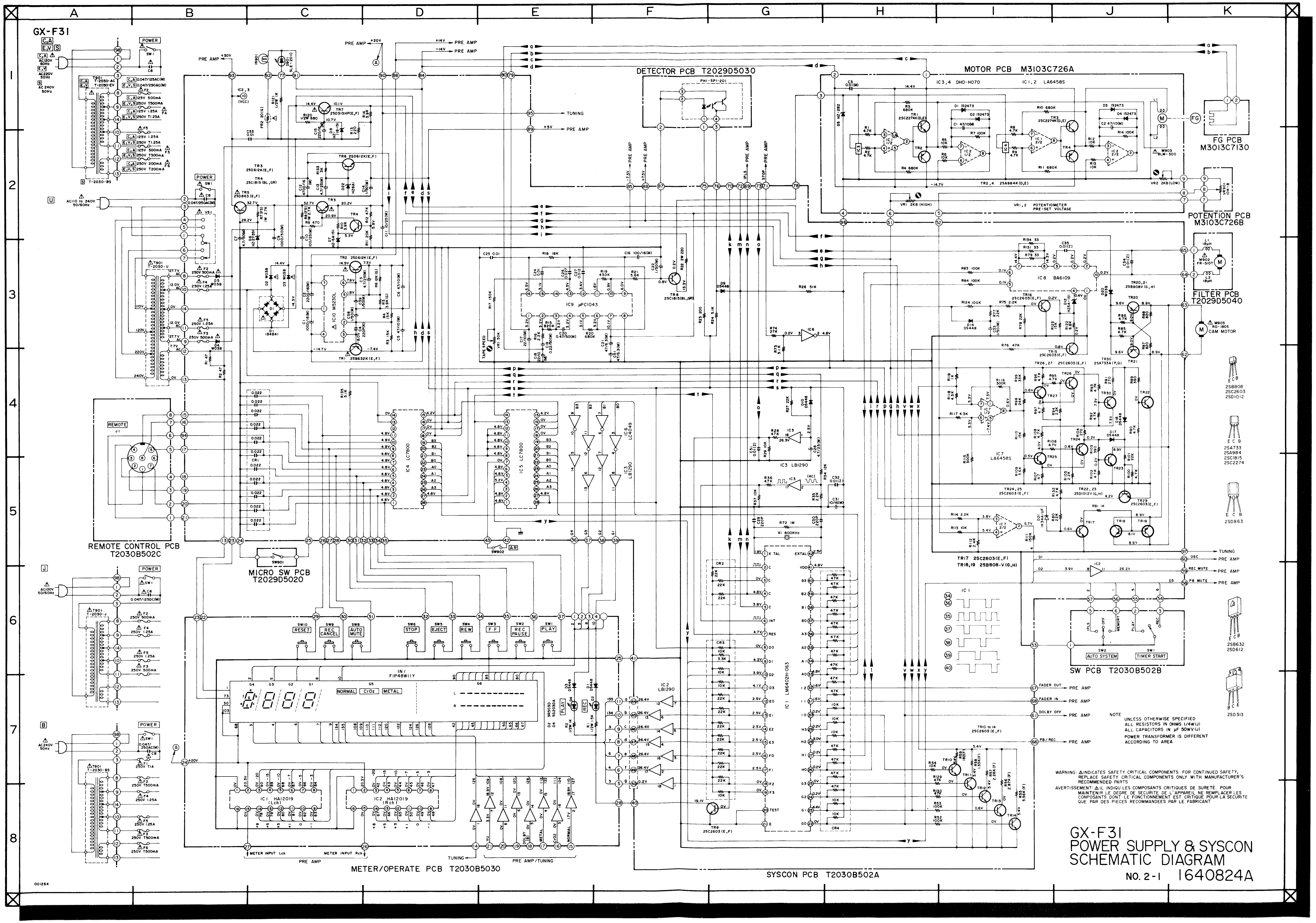

+V
A1
−V
+V
A
−V
1
2
3
4
5
6
7
8
A1 OUT
A1 −IN
A1 +IN
−V
A2 +IN
A2 −IN
A2 OUT
+V

M5230L


M5230L
8NC
7(+)IN PUT
6(+)OUT PUT
5 VOLTAGE ADJ
4(−)IN PUT
3(—)OUT PUT
2 BLANCE ADJ
1 GND


7 (+) IN PUT
START CIRCUIT
OVER HEAT PROTECTION
STANDARD VOLTAGE GENE
AMP
OVERCURRENT PROTECTION
6 (+)OUT PUT
VOLTAGE ADJ
5
1 GND
2 BLANCE ADJ
3 (−)OUT PUT
AMP
OVERCURRENT PROTECTION
4 (−) IN PUT
8 NC


A −IN
2
A +IN
3
VEE
4
B +IN
5
B −IN
6
A
B
1
A OUT
8
Vcc
7
B OUT


GX-F31
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
POWER
SW1
T901 T-2030-AC T-2030-EV
T-2030-BS
AC110 to 240V 50/60Hz
T901 T-2030-U
REMOTE
J1
REMOTE CONTROL PCB T2030B502C
MICRO SW PCB T2029D5020
SW901
SW902
AR
DETECTOR PCB T2029D5030
PHI-SPI-201
MOTOR PCB M3103C726A
IC3,4 DHD-H070
IC1,2 LA6458S
FG PCB M3013C7130
POTENTION PCB M3103C726B
VR1,2 POTENTIOMETER PRE-SET VOLTAGE
VR1 2K8 (HIGH)
VR2 2K8 (LOW)
FILTER PCB T2029D5040
M903 RD-1805 CAM MOTOR
M902 FR-510T
M901 BLM-300
IC8 BA6109
IC7 LA6458S
IC9 μPC1043
IC10 M5230L
IC4 LC7800
IC5 LC7800
IC6 LC4049
IC3 LB1290
IC1 LM6402H-063
IC2 LB1290
X1 800KHz
TR17 2SC2603(E,F)
TR18,19 2SB808-V(G,H)
TR10 to 14 2SC2603(E,F)
TR9 2SC2603(E,F)
TR8 2SC1815(BL,GR)
IN1 FIP48W11Y
NORMAL
CrO2
METAL
IC1 HA12019 (Lch)
IC2 HA12019 (Rch)
METER INPUT Lch
METER INPUT Rch
PRE AMP
PRE AMP/TUNING
METER/OPERATE PCB T2030B5030
SW10 RESET
SW9 REC CANCEL
SW8 AUTO MUTE
SW6 STOP
SW5 EJECT
SW4 REW
SW3 FF
SW2 REC PAUSE
SW1 PLAY
SW2 AUTO SYSTEM
SW1 TIMER START
SW PCB T2030B502B
TUNING
PRE AMP
REC MUTE
PB MUTE
FADER OUT
FADER IN
DOLBY OFF
PB/REC
SYSCON PCB T2030B502A
2SB808
2SC2603
2SD1012
2SA733
2SA984
2SC1815
2SC2274
2SD863
2SB632
2SD612
2SD313
001264

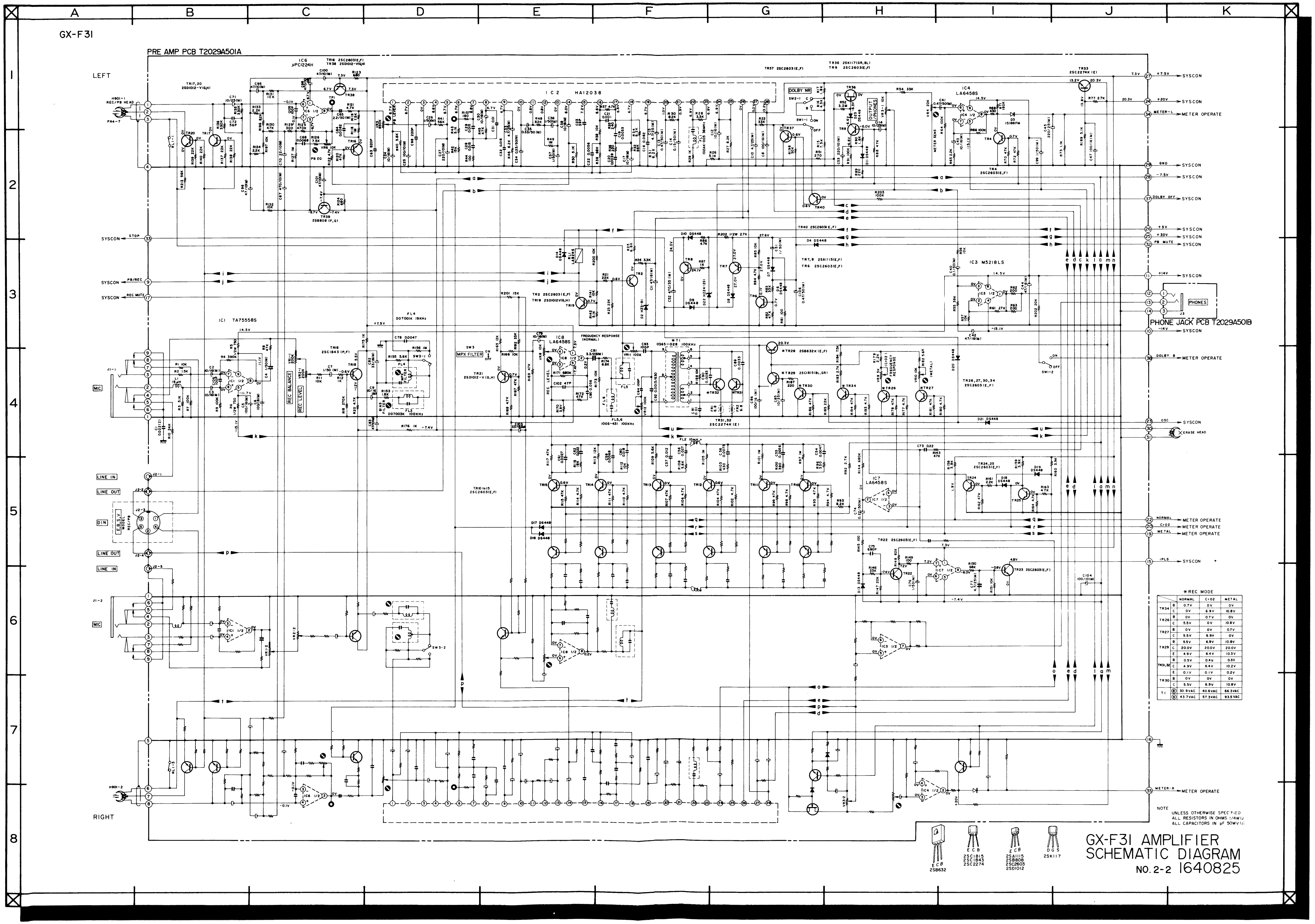
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SURETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

GX-F31
POWER SUPPLY & SYSCON
SCHEMATIC DIAGRAM

NO. 2-1 1640824A


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
GX-F31
PRE AMP PCB T2029A501A
LEFT
RIGHT
H901-1 REC/PB HEAD
H901-2
IC6 μPC1224H
IC2 HA12038
IC4 LA6458S
TR33 2SC2274K(E)
TR36 2SK117(GR,BL)
TR9 2SC2603(E,F)
TR37 2SC2603(E,F)
DOLBY NR
TR4 2SC2603(E,F)
TR40 2SC2603(E,F)
TR7,8 2SA1115(E,F)
TR6 2SC2603(E,F)
IC3 M5218LS
TR2 2SC2603(E,F)
TR19 2SD1012(G,H)
IC1 TA75558S
FL4 D0700K (19KHz)
FL5 D0700K 100KHz
TR18 2SC1843(P,F)
REC BALANCE
REC LEVEL
SW3 MPX FILTER
TR21 2SD1012-V(G,H)
IC8 LA6458S
FREQUENCY RESPONSE (NORMAL)
T1 0365-028 100KHz
FL5,6 1005-431 100KHz
TR31,32 2SC2274K(E)
TR28 2SB632K(E,F)
TR29 2SC1815(BL,GR)
TR26,27,30,34 2SC2603(E,F)
TR10~15 2SC2603(E,F)
IC7 LA6458S
TR24,25 2SC2603(E,F)
TR22 2SC2603(E,F)
TR23 2SC2603(E,F)
PHONES
PHONE JACK PCB T2029A501B
J1-1
J1-2
MIC
LINE IN
LINE OUT
DIN
J2-1
J2-2
J2-3
J2-4
J2-5
SYSCON
STOP
PB/REC
REC MUTE
+7.5V SYSCON
+20V SYSCON
METER-L METER OPERATE
GND SYSCON
-7.5V SYSCON
DOLBY OFF SYSCON
+5V SYSCON
+30V SYSCON
PB MUTE SYSCON
+14V SYSCON
DOLBY B METER OPERATE
OSC SYSCON
ERASE HEAD
NORMAL METER OPERATE
CrO2 METER OPERATE
METAL METER OPERATE
IPLS SYSCON
METER-R METER OPERATE
E C B
2SB632
E C B
2SC1815
2SC1843
2SC2274
E C B
2SA1115
2SB808
2SC2603
2SD1012
D G S
2SK117

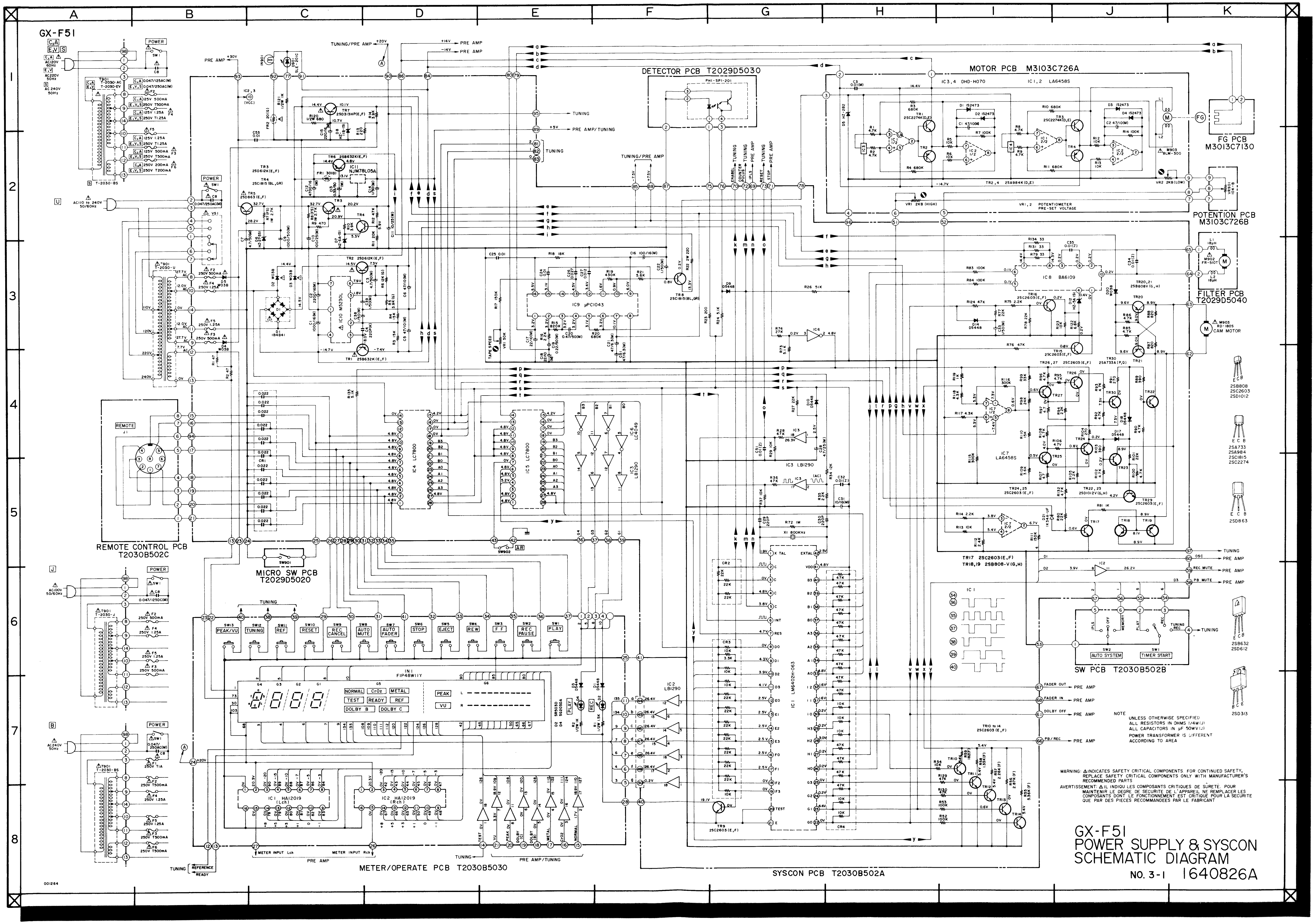
GX-F31 AMPLIFIER SCHEMATIC DIAGRAM

NO. 2-2 1640825

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)

*REC MODE

		NORMAL	CrO2	METAL
TR34	B	0.7V	0V	0V
	C	0V	6.9V	10.8V
TR26	B	0V	0.7V	0V
	C	5.5V	0V	10.8V
TR27	B	0V	0V	0.7V
	C	5.5V	6.9V	0V
TR29	B	5.5V	6.9V	10.8V
	C	20.0V	20.0V	20.0V
	E	4.9V	6.4V	10.3V
TR31,32	B	0.5V	0.4V	0.3V
	C	4.9V	6.4V	10.2V
	E	0.1V	0.1V	0.2V
TR30	B	0V	0V	0V
	C	5.5V	6.9V	10.8V
T1	⑧	30.9VAC	40.6VAC	66.3VAC
	⑨	43.7VAC	57.3VAC	93.5VAC

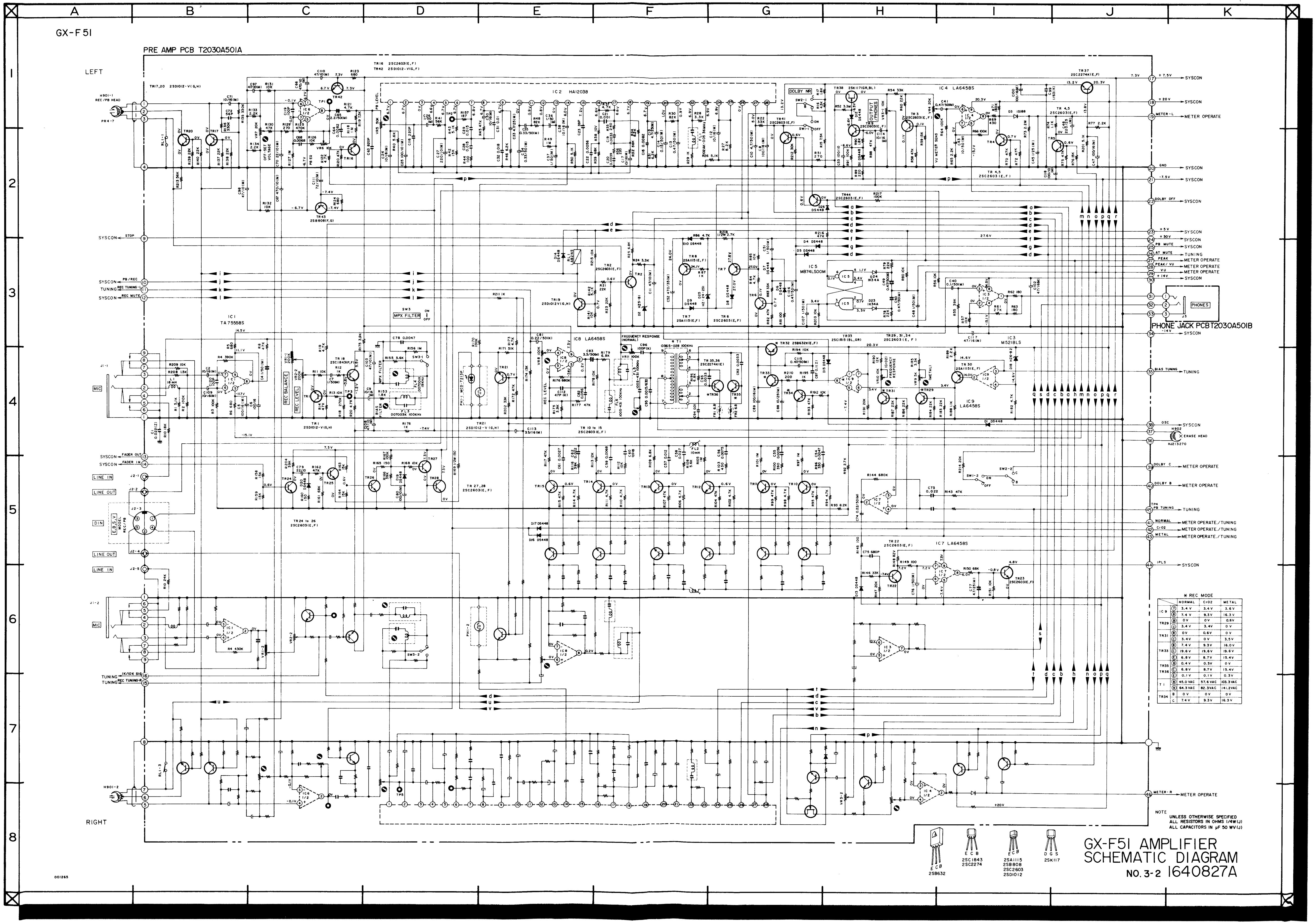

GX-F51
DETECTOR PCB T2029D5030
MOTOR PCB M3103C726A
FG PCB M3013C7130
POTENTION PCB M3103C726B
FILTER PCB T2029D5040
REMOTE CONTROL PCB T2030B502C
MICRO SW PCB T2029D5020
METER/OPERATE PCB T2030B5030
SYSCON PCB T2030B502A
SW PCB T2030B502B
POWER
PRE AMP
TUNING
PRE AMP/TUNING
FADER OUT
FADER IN
DOLBY OFF
PB/REC
IC1 LM6402H-063
IC4 LC7800
IC5 LC7800
IC9 μPC1043
IC10 M5230L
IC11 NJM78L05A
IC1 HA12019 (Lch)
IC2 HA12019 (Rch)
IN1 FIP48W11Y
M903 RO-180S CAM MOTOR
2SB808
2SC2603
2SD1012
2SA733
2SA984
2SC1815
2SC2274
2SD863
2SB632
2SD612
2SD313
001264

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

GX-F51
POWER SUPPLY & SYSCON
SCHEMATIC DIAGRAM
NO. 3-1 1640826A


GX-F51
PRE AMP PCB T2030A501A
LEFT
RIGHT
H901-1 REC/PB HEAD
H901-2
IC1 TA7555BS
IC2 HA12038
IC3 M5218LS
IC4 LA6458S
IC5 MB74LS00M
IC6
IC7 LA6458S
IC8 LA6458S
IC9 LA6458S
DOLBY NR
REC BALANCE
REC LEVEL
MPX FILTER
FREQUENCY RESPONSE
OFF-SET VOLTAGE
OUTPUT PHONES
VU METER SENS
PHONE JACK PCB T2030A501B
PHONES
MIC
LINE IN
LINE OUT
DIN
SYSCON
TUNING
METER OPERATE
METER-L
METER-R
ERASE HEAD
H902
HJ213270
GND
STOP
PB/REC
REC TUNING
REC MUTE
FADER OUT
FADER IN
PEAK
PEAK/VU
VU
AT MUTE
PB MUTE
BIAS TUNING
OSC
DOLBY C
DOLBY B
PB TUNING
NORMAL
CrO2
METAL
IPLS
+7.5V
+20V
-7.5V
+5V
+30V
-14V
E C B
2SB632
2SC1843
2SC2274
2SA1115
2SB808
2SC2603
2SD1012
D G S
2SK117
001265

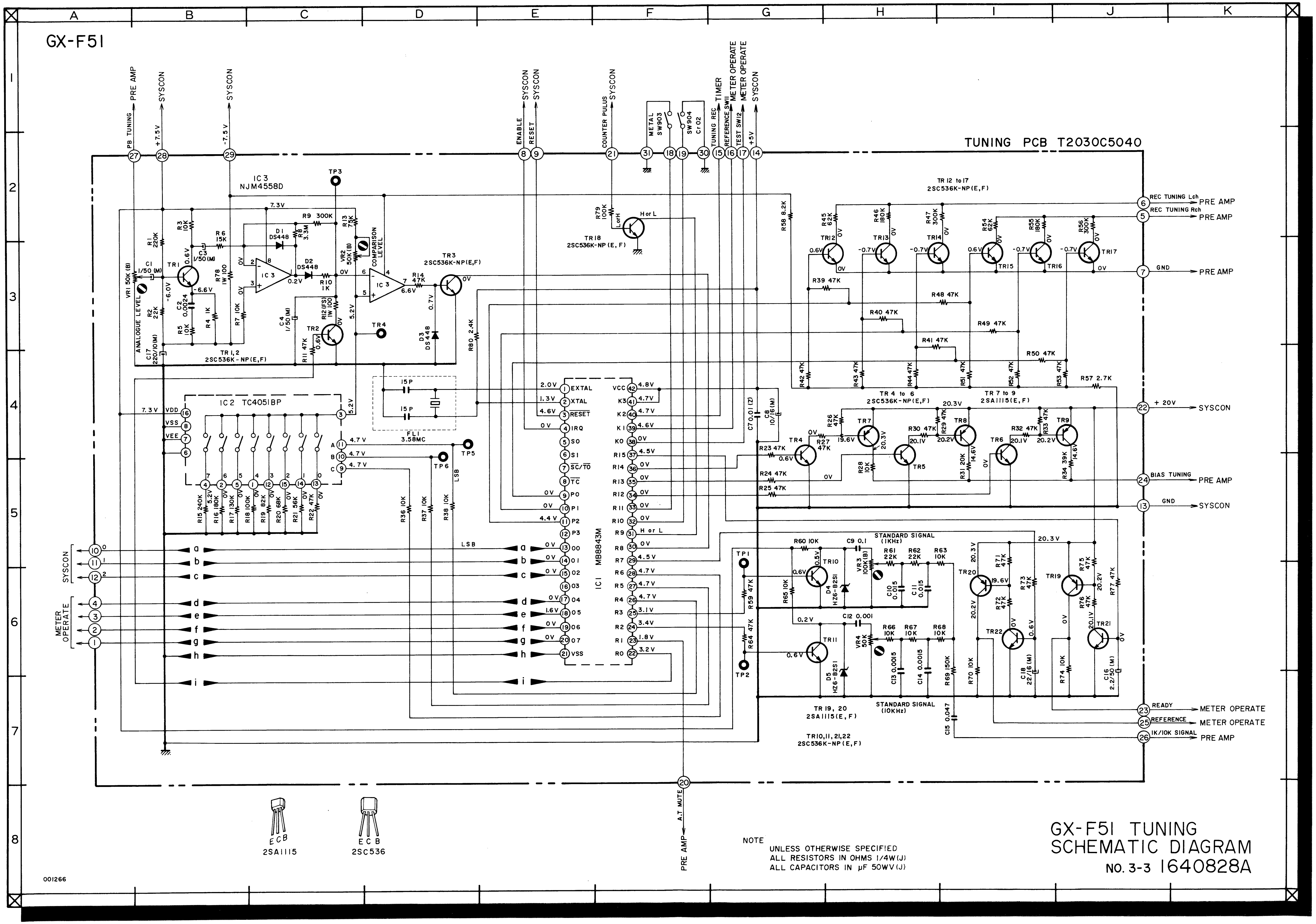
GX-F51 AMPLIFIER SCHEMATIC DIAGRAM

NO. 3-2 1640827A

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)

* REC MODE

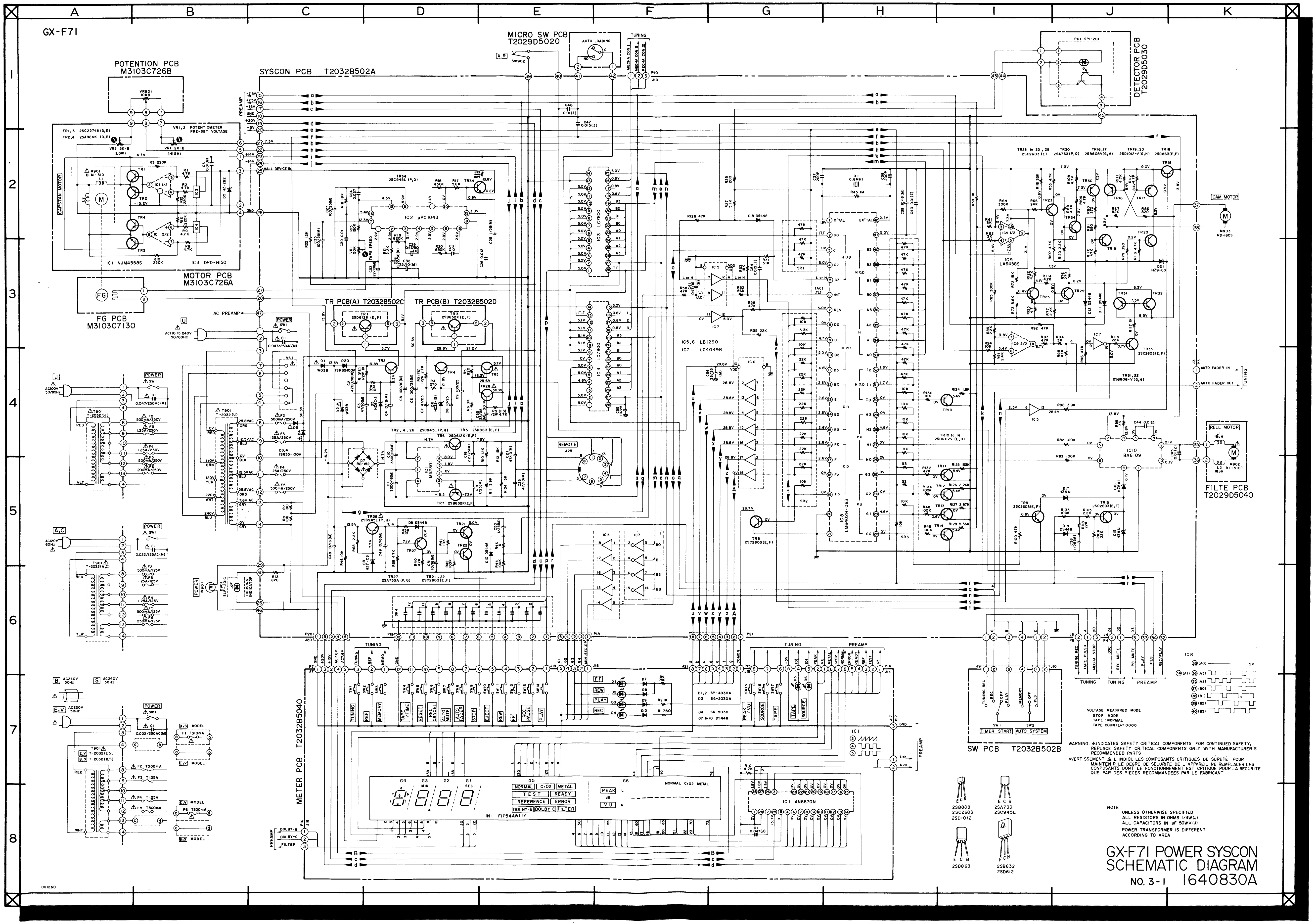
		NORMAL	CrO2	METAL
IC 9	⑦	3.4 V	3.4 V	3.6 V
	⑧	7.4 V	9.3 V	16.3 V
TR29	Ⓑ	0 V	0 V	0.6V
	Ⓒ	3.4 V	3.4V	0 V
TR31	Ⓑ	0 V	0.6V	0 V
	Ⓒ	3.4 V	0 V	3.5 V
TR33	Ⓑ	7.4 V	9.3 V	16.0 V
	Ⓒ	19.6 V	19.6 V	19.6 V
	Ⓔ	6.8 V	8.7 V	15.4 V
TR35 TR36	Ⓑ	0.4 V	0.3V	0 V
	Ⓒ	6.8 V	8.7 V	15.4 V
	Ⓔ	0.1 V	0.1 V	0.3 V
T 1	⑧	45.0 VAC	57.6 VAC	103.3 VAC
	⑨	64.3 VAC	82.3VAC	141.2VAC
TR34	B	0 V	0 V	0 V
	C	7.4 V	9.3 V	16.3 V


GX-F51
TUNING PCB T2030C5040
PB TUNING
PRE AMP
+7.5V
SYSCON
-7.5V
ENABLE
RESET
COUNTER PULUS
METAL SW903
SW904 CrO2
TUNING REC
TIMER
REFERENCE SW11
METER OPERATE
TEST SW12
+5V
IC3 NJM4558D
TP3
TR3 2SC536K-NP(E,F)
TR18 2SC536K-NP(E,F)
TR12 to 17 2SC536K-NP(E,F)
REC TUNING Lch
REC TUNING Rch
GND
ANALOGUE LEVEL
VR1 50K(B)
COMPARISON LEVEL
VR2 50K(B)
TR1,2 2SC536K-NP(E,F)
IC2 TC4051BP
FL1 3.58MC
TP4
TP5
TP6
IC1 MB8843M
EXTAL
XTAL
RESET
IRQ
VCC
LSB
TR4 to 6 2SC536K-NP(E,F)
TR7 to 9 2SA1115(E,F)
+20V
BIAS TUNING
STANDARD SIGNAL (1KHz)
STANDARD SIGNAL (10KHz)
TP1
TP2
TR19, 20 2SA1115(E,F)
TR10,11,21,22 2SC536K-NP(E,F)
READY
REFERENCE
1K/10K SIGNAL
A.T MUTE
METER OPERATE
2SA1115
2SC536
E C B
001266

GX-F51 TUNING SCHEMATIC DIAGRAM

NO. 3-3 1640828A

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF 50WV(J)


GX-F71
POTENTION PCB M3103C726B
SYSCON PCB T2032B502A
MICRO SW PCB T2029D5020
DETECTOR PCB T2029D5030
MOTOR PCB M3103C726A
FG PCB M3103C7130
TR PCB(A) T2032B502C
TR PCB(B) T2032B502D
CAPSTAN MOTOR
CAM MOTOR
REEL MOTOR
FILTE PCB T2029D5040
METER PCB T2032B5040
SW PCB T2032B502B
TIMER START
AUTO SYSTEM
AUTO FADER IN
AUTO FADER OUT
TUNING
PREAMP
REMOTE
POWER
IC1 NJM4558S
IC3 DHD-H150
IC2 μPC1043
IC3 LC7800
IC4 LC7800
IC5,6 LB1290
IC7 LC4049B
IC8 LM6402H-063
IC9 LA6458S
IC10 BA6109
IC1 AN6870N
IN1 FIP54AW11Y
TUNING
REF
MEMO
TAPE/TIME
RESET
REC CANCEL
AUTO MUTE
AUTO REPEAT
STOP
EJECT
REW
FF
REC PAUSE
PLAY
PEAK/VU
SOURCE
TAPE
NORMAL
CrO2
METAL
TEST
READY
REFERENCE
ERROR
DOLBY-B
DOLBY-C
FILTER
PEAK
VU
D1,2 SY-4030A
D3 SG-2030A
D4 SR-5030
D7 to 10 DS448
IC8
33 (A0) 5V
34 (A1) 36 (A3)
35 (A2)
37 (B0)
38 (B1)
39 (B2)
40 (B3)
2SB808
2SC2603
2SD1012
2SA733
2SC945L
2SD863
2SB632
2SD612
E C B
A B C D E F G H I J K
1 2 3 4 5 6 7 8
001260

VOLTAGE MEASURED MODE
STOP MODE
TAPE : NORMAL
TAPE COUNTER: 0000

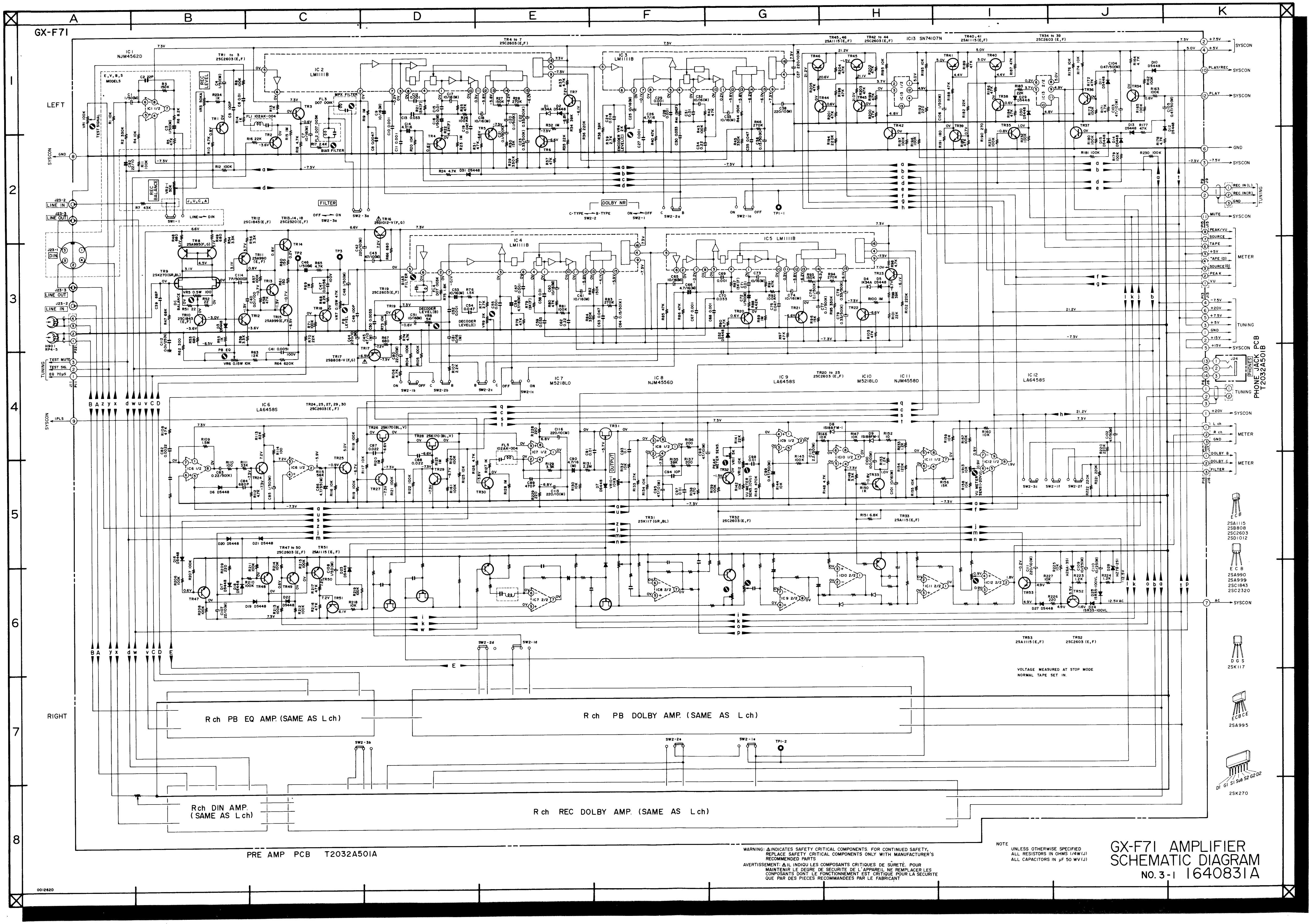
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

GX-F71 POWER SYSCON SCHEMATIC DIAGRAM

NO. 3-1 1640830A


GX-F71
LEFT
RIGHT
Rch PB EQ AMP. (SAME AS Lch)
Rch PB DOLBY AMP. (SAME AS Lch)
Rch DIN AMP. (SAME AS Lch)
Rch REC DOLBY AMP. (SAME AS Lch)
PRE AMP PCB T2032A501A
PHONE JACK PCB T2032A501B
SYSCON
TUNING
METER
VOLTAGE MEASURED AT STOP MODE
NORMAL TAPE SET IN
2SA1115
2SB808
2SC2603
2SD1012
2SA990
2SA999
2SC1843
2SC2320
2SK117
2SA995
2SK270

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

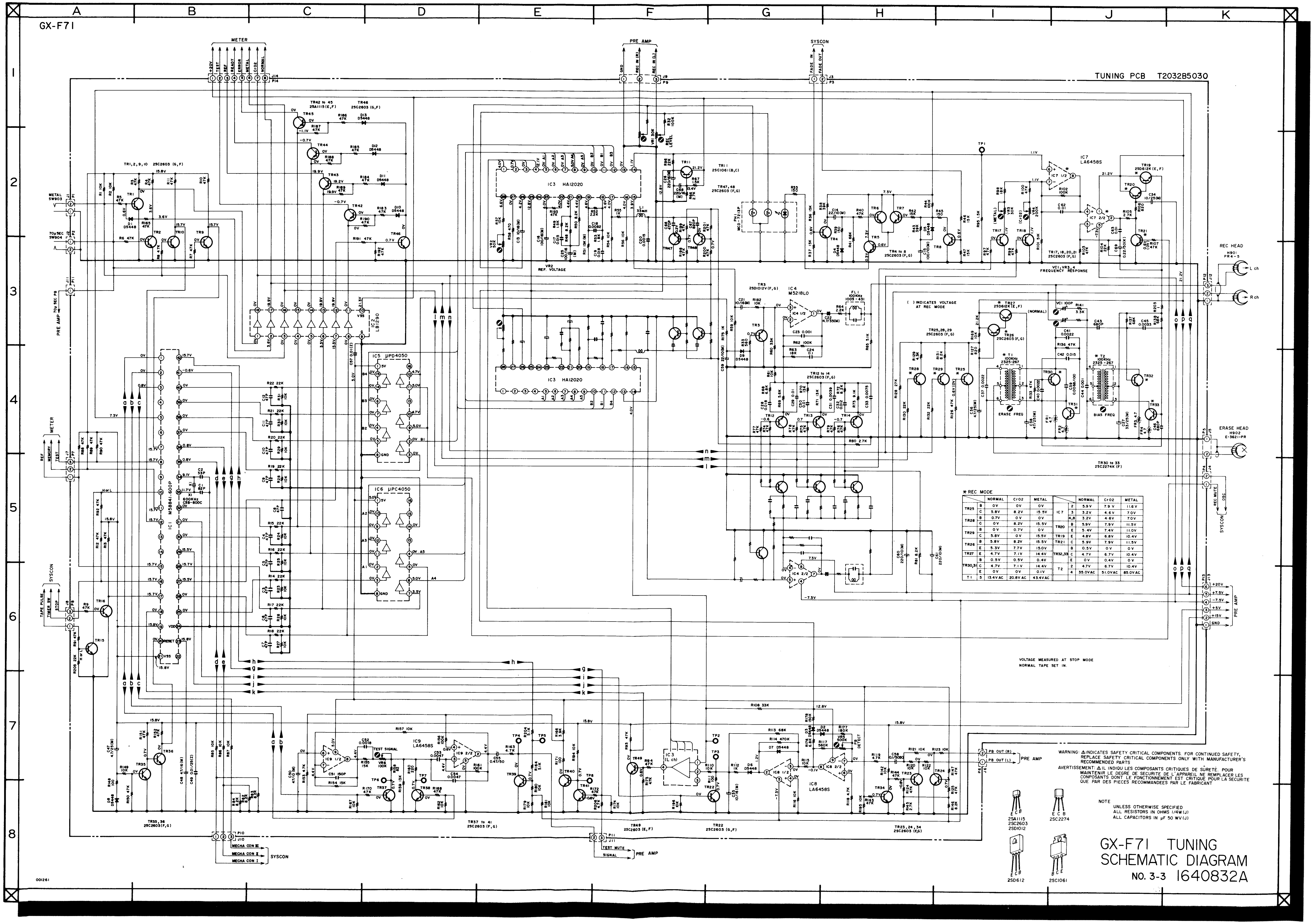
AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)

GX-F71 AMPLIFIER SCHEMATIC DIAGRAM

NO. 3-1 1640831A

0012620


GX-F71
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
TUNING PCB T2032B5030
METER
PRE AMP
SYSCON
METAL SW903
70μSEC SW906
REC HEAD H901 PR4-5
L ch
R ch
ERASE HEAD H902 E-3621-PR
MEMORY
TEST
TAPE PULSE
TIMER SW
STOP
PB OUT (R)
PB OUT (L)
MECHA CON III
MECHA CON II
MECHA CON I
TEST MUTE
SIGNAL
+20V
+7.5V
-7.5V
+5V
+15V
GND
IC1 M58841-600P
IC2 LB1290
IC3 HA12020
IC4 M5218L0
IC5 μPD4050
IC6 μPC4050
IC7 LA6458S
IC8 LA6458S
IC9 LA6458S
TR1,2,9,10 2SC2603 (G,F)
TR42 to 45 2SA1115 (E,F)
TR46 2SC2603 (G,F)
TR11 2SC1061 (B,C)
TR47,48 2SC2603 (F,G)
TR3 2SD1012Y (F,G)
TR4 to 8 2SC2603 (F,G)
TR12 to 14 2SC2603 (F,G)
TR17,18,20,21 2SC2603 (F,G)
TR19 2SD612K (E,F)
TR27 2SD612K (E,F)
TR25,28,29 2SC2603 (F,G)
TR26 2SC2603 (F,G)
TR30 to 33 2SC2274K (F)
TR35,36 2SC2603 (F,G)
TR37 to 41 2SC2603 (F,G)
TR49 2SC2603 (E,F)
TR22 2SC2603 (G,F)
TR23,24,34 2SC2603 (F,G)
VR2 REF. VOLTAGE
VC1, VR3,4 FREQUENCY RESPONSE
FL1 100KHz
600KHz CSB-600C
T1 100KHz 2325-267
T2 100KHz 2323-267
ERASE FREQ
BIAS FREQ
REC LEVEL
TEST SIGNAL
VR5
VR6
DETECT
( ) INDICATES VOLTAGE AT REC MODE
VOLTAGE MEASURED AT STOP MODE NORMAL TAPE SET IN
E C B
2SA1115
2SC2603
2SD1012
E C B
2SC2274
E C B
2SD612
B C E
2SC1061
001261

✱ REC MODE

		NORMAL	CrO2	METAL
TR25	B	0V	0V	0V
	C	5.8V	8.2V	15.5V
TR28	B	0.7V	0V	0V
	C	0V	8.2V	15.5V
TR29	B	0V	0.7V	0V
	C	5.8V	0V	15.5V
TR26	B	5.8V	8.2V	15.5V
	E	5.3V	7.7V	15.0V
TR27	E	4.7V	7.1V	14.4V
TR30,31	B	0.5V	0.5V	0.4V
	C	4.7V	7.1V	14.4V
	E	0V	0V	0.1V
T1	5	13.4V AC	20.8V AC	43.4V AC

		NORMAL	CrO2	METAL
IC7	2	5.9V	7.9V	11.6V
	3	3.2V	4.6V	7.0V
	4,8	3.2V	4.6V	7.0V
TR20	B	5.9V	7.9V	11.5V
	E	5.4V	7.4V	11.0V
TR19	E	4.8V	6.8V	10.4V
TR21	C	5.9V	7.9V	11.5V
TR32,33	B	0.5V	0V	0V
	C	4.7V	6.7V	10.4V
	E	0V	0.4V	0V
T2	2	4.7V	6.7V	10.4V
	4	35.0VAC	51.0VAC	85.0VAC

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV(J)

GX-F71 TUNING SCHEMATIC DIAGRAM

NO. 3-3 1640832A